

consumer
electronics



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For the woman with connections

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June 2005
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ZEN MICRO

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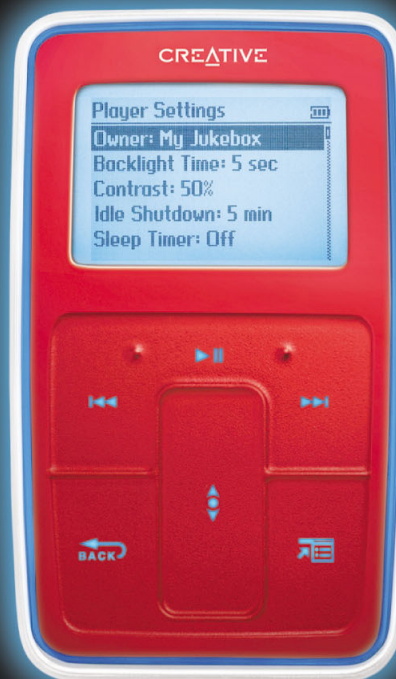
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- Micro-sized MP3 player ◦ Mesmerizing blue glow ◦ Curved to fit in the palm of your hand
- Up to 12-hour battery life on a single charge ◦ Removable battery to extend playtime another 12 hours
- FM radio ◦ Voice recorder ◦ Intuitive vertical touch pad control
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msn music



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The color of ZEN

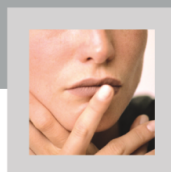
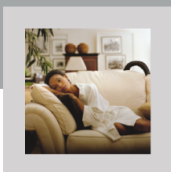


THE NEW Micra 6 SYSTEM FROM athena TECHNOLOGIES

BEAUTIFULLY DESIGNED TO SUIT YOUR LIFESTYLE.

You will not believe the rich clean sound from a system so small it can go just about anywhere. An elegant center channel and four matching satellites come complete with adjustable mounting brackets, making for the perfect plasma or LCD display solution. The matching subwoofer is stylish enough to show off, or small enough to hide, providing deep rich bass to shake your soul. Come hear what all the critics have been raving about, the tiny **Micra 6** from athena TECHNOLOGIES.

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SOUND!

Micra 6



Great theater deserves a great setting.



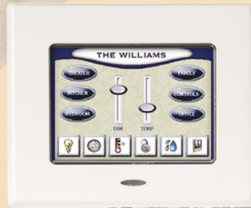
The beauty and warmth of real maple or cherry come to life in the distinctive style of new Woodbrook furniture from Sanus. The fine lines provide a beautifully functional setting for your audio and video components, with convection cooling engineered into the cabinet design. Choose from a variety of door and drawer options. See Woodbrook furniture and more at www.sanus.com. Come and browse through the woods.

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lifestyle close-up

Whole-House Audio Systems

Music can make a good party into one that your guests talk about for months to come. If you like to entertain or if you spend a lot of time at home, investing in a whole-house audio system could be perfect for you and your family. But the possibilities can be overwhelming, and not every house is right for every system. We explain several major whole-house audio system scenarios, and for the DIY'er in everyone, we tell you how to create one yourself without mucking up your home's decor.

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The Music You Want, Where You Want It

45 Clutter-Free Audio

Set Up A Wireless Audio Network In Your Home

50 Furniture For Your Audio System

Store The Equipment In Style

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Setting Up & Enjoying Your Whole-House
Audio System



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Open

There's always something new, interesting, and stylish happening in the world of consumer electronics. That's why the Open section packs the latest news and trends into the first few pages of *CE Lifestyles*, along with the sparkle and bling that you can buy to accessorize your devices.

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A Look At The Latest Consumer Electronics

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Accessories With Style



A/V Club

Some of our favorite electronic gadgets are the ones that provide the sounds and pictures that move and entertain us and our friends and family. Whether you want to put together a wireless audio system for your home or just want help using the plasma TV in your living room, A/V Club can help.

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Set Up A TiVo

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Transfer From VHS To DVD With A New Combo Unit

34 Music To Your Ears

You Can Have Style,
Comfort & Great Sound

38 Tips

Troubleshooting DVD
Problems



Digital Studio

Digital cameras and camcorders are changing the way we record the moments of our lives, from quick snapshots of favorite vacation spots to priceless video clips of first steps and other important milestones. Get to know your new digicam or camcorder and learn what to do with your photos and video once you have them.

56 Shed Some Light On Digital Video

Because Video Should Be Seen As Well As Heard

60 Know How

One Problem, Three Solutions

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Consider Rechargeable Batteries For Your Digital
Devices

68 Tips

For Cell Phone Camera Pictures





OptomaHDTV

High Definition | **redefined.**

Award winning Optoma DLP™ HDTV Series delivers a 1280 x 720, widescreen DVI pure digital image. Unmatched 1% overscan allows you to watch the full image from either computer or video source. Extra wide viewing angle and a 16:9 non-reflective screen means richer blacks with no image burn-in, fading, or degradation. Optoma Plasma Series offers a full 50" screen with an incredible 3000:1 contrast ratio and a resolution of 1,366 x 768 addressable pixels. Optoma Front Projection Series offers the very best in Home Theater experience.

*"The Optoma RD50/RD65 delivered outstanding image and picture quality for both computer and video applications to capture the 2004 DisplayMate Best Video Hardware Guide™ FiveFive-Star Award for the **best large screen High Definition Television Display available today.**" Dr. Raymond Soneira, President of DisplayMate Technologies.*

Optoma

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Optoma has an HDTV Solution that's just right for YOU.



DLP Front Projection Series



DLP Rear Projection Series



Plasma Series

2004 ★★★★★ Award
BEST DISPLAYMate™
VIDEO HARDWARE GUIDE



CE @Home

The consumer electronics in our homes are no longer limited to TVs and DVD players. Smart appliances, home automation, and whole-house audio systems are becoming more and more common and affordable for families, and with so much available, why check CE at the door?

70 It's Everywhere, It's Everywhere!
Dirt, Grime & Your Portable DVD Player

74 Home Awareness Systems
Watching Your House While You're Away

78 Smart Appliances
Alive Or Dead?

83 Tips
The PC In Your Kitchen

CE Lite

Most CE devices are all about fun. Here, we'll tell you about the latest albums and films to catch, so you can make sure your entertainment is as up-to-date as your gear. And so as not to forget our roots, "Retroscope" traces how a favorite CE device has changed over the years.

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Editor's Note

When I was in graduate school, I went to London to study at the British Library and finish my thesis, which was a transcribed and edited selection of letters written by Margaret Cavendish, a duchess who lived in 17th-century England. Cavendish was the first woman allowed into the Royal Society (England's premiere scientific academy), and she was keenly interested in contemporary technological advances, something fairly unprecedented during her lifetime.

Like any scholarly institution, the British Library was concerned with preserving these letters; like any scholarly editor, I was concerned with being true to the text. I wanted a way to present images of these letters to my readers, but of course I couldn't bring them back to the States, or photograph them, or make copies. So I hired someone in the British Library's manuscripts reading room to capture these frail letters onto a roll of microfilm. When I got back to school, I printed them, used a high-res scanner to upload their images to my PC, and burned the entirety of the collection onto a CD, which I submitted to my thesis committee along with my edition. It was a roundabout way of getting them to my reader, but it worked.

Throughout the process, I was keenly aware of what an anachronism it was that I was using these high-tech devices to bring a bunch of 300-year-old letters (complete with brittle wax seals and red—albeit faded—ribbons) across an ocean and into another continent. What a divide that scanner and CD-RW bridged! And it's remarkable how often we all use similar technology to bridge gaps in our everyday lives, between us and the people we care about. I can't help but smile at how Cavendish, a tech-girl in her own right, would have loved what I was (and am) doing.

Live well, friends.

Katie Sommer
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A woman is shown from the chest up, wearing a brown blazer over a light green collared shirt. She is holding a silver and black flip phone in her hands, with her fingers on the keypad. She is also wearing black earbuds with a visible cord. The background is dark and out of focus.

for the
woman with
connections



Lifestyles™

Building a Home?

We can make it do more.

It's about a better life.

Enjoy audio, video and control—in every room!

See the Nursery, Yard and Door From TVs and VIA! Panels.

Enjoy Entertainment and Communications in Every Room.

Select a System Designed to Suit Your Life and Home.

Choose Individual Interfaces to Match Your Décor.

Adjust Temperature and Lights From Anywhere.

Stream Digital Music Into Any Room.

And More.



Choose your counter tops. Pick top grade cabinets and fixtures. Select music, movies, and news – with one touch on a touch panel from anywhere in the house? Yes! Investing in your home just took on a whole new dimension.

Whether you're building new or remodeling, now's the best time to include all the things that will save time, and make life more enjoyable.

From one touch access to your entertainment, to controlling lights, security and drapes – ELAN has a simple way to control it all. Touch a control panel in your den to see who's at the front door – or start the movie and enjoy incredible audio piped through in-wall speakers.

We offer a seamless approach to simplifying your electronics. Just as an architect designs your living spaces, an ELAN Dealer can design a personalized system, allowing you to make the most of your home.

And, with multi-room audio and video, the wires are neatly tucked away behind the walls, just as your phone and electrical wires are.

It's not about the electronics – it's about a better life. It's one of the biggest decisions you'll make. Consider incorporating an easy-to-use, whole-house system from ELAN. Call us today and let your home do so much more.

Life Just Got Better™



TOUCH



LISTEN



RELAX



WATCH



TALK

ELAN™
HOME SYSTEMS

TO FIND OUT MORE ABOUT ANY OF ELAN'S EXCITING PRODUCTS CALL 1-877-289-3526 OR VISIT US AT ELANHOMESYSTEMS.COM.

Take The Doctor's Office With You

Convenience caters to the health-conscious in Panasonic's new lineup of portable blood pressure and heart rate monitors (www.panasonic.com).

Two of the four new models, the EW3003W (\$59.99) and EW3037S (\$89.99), fit neatly around your wrist. They employ Panasonic's Digital Filter Technology, which reduces or eliminates some of the movement and noise made by arm units and results in more accurate readings. In fact, the wrist units monitor a person's vital signs while inflating, which makes for a quicker read.

The EW3003W stores the last 21 readings and, when placed in its compact case, is just 2-inches thick. The EW3037S retains the last 90 readings and also features a three-times-daily reminder system. Both of these models operate on two AAA batteries.

Panasonic's EW3106W (\$59.99) and EW3122S (\$89.99) models are for use around the upper arm. The former retains 21 readings in its memory, while the latter can save up to 42 readings each for two users. The arm units run on four AA batteries. All four models will be available in June.



Yamaha To Make XM-Ready Receivers

Thinking of setting up a home theater system? You may want to consider new receivers from Yamaha (www.yamaha.com) that are designed to receive XM Satellite Radio programming right out of the box.

In April, Yamaha unveiled four XM-ready receivers from its HTR series, including two 6.1-channel and two 7.1-channel receivers. They range in price from \$349.95 to \$849.95. Yamaha also plans to produce XM-ready receivers for its YHT line of products.

Plug any of these receivers into an XM Connect-and-Play home antenna (\$49.99), subscribe to XM's service at \$12.95 a month, and enjoy more than 150 digital channels of music, sports, news, and more.





Don't Mistake This MP3 Player For Your Compact

Samsung (www.samsung.com) has released the world's smallest MP3 player with photo-viewing capabilities: the YP-T7 Picture Viewer and Audio Player. Weighing just 3 ounces and measuring about a 1/2-inch thick and 2-1/2-inches long, this ultra-slim player can display JPEG (Joint Photographic Experts Group) picture files and play MP3 and WMA audio files. It also features an alarm clock, voice recorder, and programmable FM tuner. Its rechargeable lithium-polymer battery lasts up to 12 hours between charges.

The YP-T7 is available in two storage sizes: 512 MB (\$149.99) and 1 GB (\$199.99).

BlackBerry™

BlackBerry To Offer Integrated IM Services

Now you can have your BlackBerry and preinstalled IM, too. Research In Motion, the maker of the popular BlackBerry line of PDAs (www.blackberry.com), has teamed up with America Online and Yahoo! to preinstall instant messaging services on future BlackBerry devices. Current users of BlackBerrys will be able to download AOL Instant Messenger, ICQ service, and Yahoo! Instant Messenger and install that software on their devices.



Turn Your iPod Into A Stereo

Put away your iPod headphones. Although it's polite to keep your music (mostly) to yourself in public, you don't have to anymore thanks to the mm22 Portable Speakers for iPod from Logitech (\$79.99; www.logitech.com).

The name suggests otherwise, but these speakers aren't limited to use with an iPod. You can plug them into any laptop or portable music player that sports a 3.5mm jack. They come with two cables: a 10-inch cable for connecting to an MP3 player, and a 24-inch cable for connecting to a notebook.

The speakers weigh in at a feather-light 12 ounces and fold into a book-sized traveling case. The hard-sided case, which is included in the price, also carries a power adapter, the two speaker cables, and your iPod.

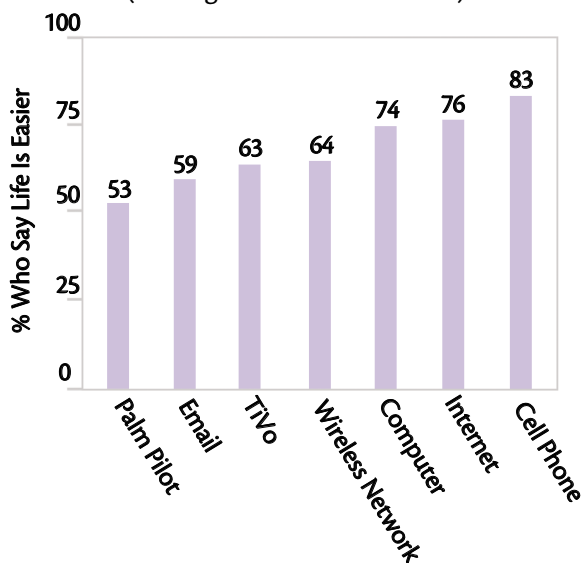
Cell Phones: Americans Love 'Em & Hate 'Em

A recent survey by the University of Michigan Institute for Social Research shows that while 83% of people polled say that cell phones make their lives easier, 60% also say that the public use of cell phones has "disturbed or irritated them."

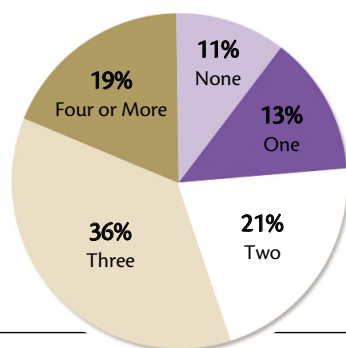
In fact, 42% go so far as to say that legislation should be passed to ban speaking on cell phones in public areas such as cinemas and restaurants. Of the 752 Americans 18 and older surveyed, only 30% concur that people should be "reachable any time or any place" via cell phones.

In addition to tracking use and attitudes about cell phones, the research reveals trends in ownership/use of other consumer electronic products and technologies, including email, TiVo, and Palm Pilots.

The Degree To Which Various Technologies Have Made People's Lives Easier
(Among those who own them)



Levels Of Technology Ownership In The United States
(Number of technologies owned)



Best-Selling Digital Still Cameras

A survey of January sales of digital still cameras, including dual cameras, shows an almost even percent of the market share between the top two manufacturers. Here are the top five manufacturers and their shares of the market.



| Manufacturer | Market Share |
|--------------|--------------|
| Canon | 20.7 |
| Sony | 20.0 |
| Kodak | 17.2 |
| Olympus | 10.0 |
| Nikon | 9.6 |

tidbits

54% of families with teenagers and Internet-connected home computers employ either an Internet filter or monitoring program, up from 41% five years ago.

Source: Pew Internet & American Life Project

Logitech surpassed the **25** million mark in Web cams sold worldwide, the company announced in March.

Source: Logitech

The **CEA** (Consumer Electronics Association) projects that 3 million DCR (digital cable-ready) TV sets will be sold this year. More than 1 million were sold in 2004.

Source: CEA

22 million adult Americans—roughly 11% of the population—own an iPod or other MP3 player. That includes one in seven adults in the 30 to 39 and 40 to 48 age groups.

Source: Pew Internet & American Life Project

The percentage of new homes built in 2004 with a multiroom audio system remained at 12%—same as the previous year—according to the third annual home-builder survey.

Source: CEA and National Association of Home Builders

HP is the leading seller of notebook PCs worldwide, with 15.6% of the market share.

Source: IDC

Sony dominated **sales** of camcorders in January, with 45.2% of the \$60 million-plus market. Panasonic was second with 17.6%.

Source: The NPD Group/NPD Techworld

Denon's philosophy is simple.

Either
you're
innovating
or
you're
imitating.



Introducing Denon's New AVR-5805

The World's First 10-channel A/V Receiver With Fully Configurable 4-zone Capabilities

A Breakthrough In Multi-source, Multi-zone Flexibility

For the home entertainment enthusiast and custom installer alike, Denon's new AVR-5805 delivers unprecedented four-zone home entertainment integration and control — all from a single component. With 10 configurable and discrete amplifiers, 16-channels of audio output, and the world's first-ever ability to drive two fully independent 5.1 systems, the AVR-5805 will also route audio and video signals from up to four independent sources and distribute them to up to four separate zones throughout the home. Its advanced capabilities even allow discrete power, source selection and volume control of each zone. And flexibility is just the beginning. Read on.

Masterful Technologies And A "Sweet Spot" For Every Listener

Behind the AVR-5805's newly designed, easy-to-read front panel display is a profusion of powerful technologies. An Equal Power amplifier section delivers a massive 170 watts of high-current power into each of its ten channels, processing for every popular 7.1-, 6.1- and 5.1-channel surround sound format — from Dolby (including Pro Logic IIx) and dts, to THX Ultra2 and THX Surround EX. The AVR-5805 also introduces the latest in Auto Setup Calibration and Equalization with the Audyssey MultEQ_{XT} system, tailoring sound not only to the listening environment but also to the audience. This advanced technology analyzes and calibrates six critical settings including variable crossover point detection. It also determines the correct frequency response for up to six separate listener positions and then averages all six. The result? Literally a "sweet spot" for every listener in the room.



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This is innovation.

Advanced Video Conversion And Denon's Exclusive Circuitry

The AVR-5805 offers a full complement of advanced processing capabilities like HDMI/DVI digital video selection, video up-scaling (including Faroudja DCDi technology for analog sources) and the world's first dual, independent video conversion for unmatched simplicity and the highest picture quality from all your video gear. For even greater A/V performance, it employs the most advanced Texas Instruments' and Analog Devices' 32-bit DSP processors, Burr-Brown 24-bit/192kHz audio DACs, as well as Denon's newly improved DDSC-D (Dynamic Discrete Surround Decoder-Digital). And to top it off, exclusive Advanced AL24 Processing Plus circuitry maximizes all source signals so that the high-resolution DA converters work at peak capacity.

More Connection Options Than Any Receiver In The Industry

In addition to an extensive complement of digital and analog A/V connections, the AVR-5805 includes a full array of "custom installation" features: assignable high amperage DC trigger outputs, dual RS-232C ports to facilitate integrated system and PC connectivity, and a built-in Ethernet port that adds more system control as well as future updates and upgrades. In-demand connection options include 6 high-bandwidth (100 MHz,) HDTV-compatible component video inputs, HD switching for 2 zones and much more. Finally, the latest version of Denon Link 3 and dual IEEE-1394 inputs allow for reception of high-resolution, multi-channel digital audio data directly from compatibly equipped DVD players. It all adds up to total flexibility and the ultimate level of sonic performance. Denon does it again.

DENON
The First Name in Digital Audio

watch what she if w a t c h

Electronics have to be portable. If they aren't easy to move around or they tie you down, we don't even want to know. Not only are these products stylish and easy to use, but they are also good on the go.



Multipod 5 in 1

\$149.99

www.multipod5in1.com

If you're on the lookout for a simple and affordable way to store data, snap pictures, and record video and voice memos, look no further. The Multipod 5 in 1 acts as a memory stick, digital camera, voice recorder, video camera, and Web cam. The most impressive part? The whole thing will easily fit on your keychain or in your bag.



Sennheiser RS140 Wireless Headphones

\$219.95

www.sennheiser.com

Don't get tied down. With Sennheiser's new wireless headphones, roam free of your desk and leave the room without interrupting your listening. The 900MHz frequency will reach all around your house, and its channels help avoid interference from other devices. Sennheiser's high quality makes sure music, TV, and movies sound their best—wherever you are.



Philips PSS110 Personal Sound System

\$159.99

www.philips.com

Why keep separate music players and speakers when you can combine them? Philips puts 256MB of storage into a tiny boombox for portable room-filling sound. Weighing only 12 ounces, with 10 hours of battery life, the PSS110 is both portable and stylish.



Magellan eXplorist 500

\$399.99

www.magellangps.com

You're not afraid to ask directions, but Magellan's newest handheld GPS means you won't have to. Navigate vacation spots, or just new neighborhoods, with the color screen, built-in maps, and removable storage for recording waypoints and route logs. And the next time a precocious youngster asks "are we there yet?," let her calculate the answer for herself.

ZON[®]

Whole House
Digital Audio

**All-Digital
Multi-Room
Audio**



Do It All Over The House.

No smoke, no mirrors – just 100% digital technology only from ZON. "For sheer wow factor, ZON is the winner" according to *Sound & Vision* (January 2005). "... the sound quality was excellent, and being able to handle digital signals from your sources puts ZON in a class by itself." Also unique to ZON are the easy to use Euro-styled in-wall amplified controllers (providing 60 Watts into 8 Ohms) and the ability to use the latest optical and coax digital audio components, and even old school analog audio (converted to digital by ZON). ZON elevates multi-room audio to new levels of perfection – it's like having live performers all around your house.



Worldwide Distribution by



800.262.6898
www.zonaudio.com



Panasonic PV-GS250

\$999.95

www.panasonic.com

Three heads are better than one. And three video chips (one each for red, green, and blue) capture colors and detail better than just one. Panasonic's latest digital video camera will help capture all the action this summer with its compact form and industry-standard MiniDV tapes.



Harmony 880 Universal Remote Control

\$249.95

www.logitech.com/harmony

Universal remotes de-clutter rooms and simplify entertainment systems. Harmony's unique system adds easy setup and usability. Set everything in motion for watching DVDs and TV or listening to music at the touch of a single button. Harmony's latest model includes a recharging dock and new buttons for adjusting widescreen and HDTV sets. The online setup engine is still the best thing we've seen in remote controls. Just enter your model numbers, tell the wizard which components do what, sit back, and enjoy.



Pentax Optio WP

\$400

www.pentaximaging.com

Don't worry about the camera when snapping pics of the kids by the pool or at the beach. The new Optio WP is waterproof up to three feet. The 5MP (megapixel) digicam has an optical zoom and two-inch LCD. Blow-up rafts and sunscreen not included.



open

outfit your life

Accessories With Style

The right accessory is its own reward.

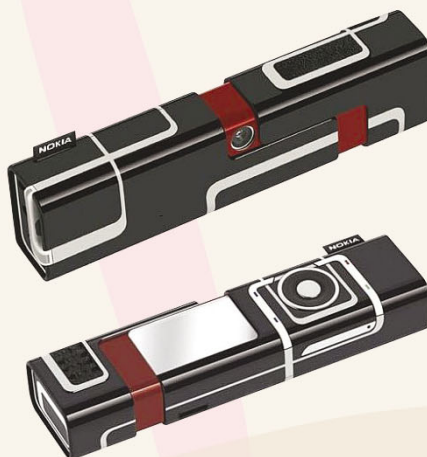
COMPILED BY SEAN DOOLITTLE



Plantronics M2500 Bluetooth Headset

\$89.95 • www.plantronics.com

It would be a shame to distract attention from the clean, designer lines of a phone such as the 7280 with the snarled dangle of cord trailing from your ear bud. In fact, those cords are annoying no matter what your phone looks like. If your phone supports Bluetooth wireless capability, try this sleek, discreet, clear-sounding headset from Plantronics. You'll get up to five hours talk time, and you can wander up to 30 feet away from the phone itself. Best of all: no wires.



Nokia 7280 Art Deco Cell Phone

\$499 • www.nokia.com

Now here's a cellular camera phone that knows how to stand out and blend in at the same time. Think of Frank Lloyd Wright, classic Manhattan, and 1930s Hollywood channeled via your local Nokia retailer. Packed with features, but free of such boring old ideas as keypads and antennae, the Nokia 7280 combines a sophisticated form with ample function.



Anika Carryall Bag

\$149.99 • www.jascoproducts.com

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Set Up A TiVo

"Sex and the City" fans may wonder why Miranda Hobbes would trade in her Steve-o for TiVo. However, those with TiVo understood and probably chuckled. The rest of us were left wondering, "Why is there such an obsession with TiVo?"

With over 3 million subscribers as of January 2005, TiVo is the most recognizable among DVR (digital video recorder) technologies and services.

The technology is packaged in a unit containing a hard drive, CPU, and input/output elements. It digitally records the incoming signal of a program to the hard drive. The program is available for you to view at your convenience.

Think of it like a VCR—except with better quality and no tapes. (See the "TiVo Models" sidebar for information about your choices of TiVo box.)

DVR service is offered as a monthly subscription or as a one-time fee when you buy your unit. (See the "Subscription Choices" sidebar for more information about DVR services.) The service also provides additional features to make a DVR easy to use. Some features advertised by DVR services include pausing and rewinding live programs, simplified tools to record all or only new episodes of a series, and Internet scheduling for recordings.

A networked TiVo offers even more features. Play MP3s stored on your networked computer through your sound system. You can present vacation photos to dinner



guests as a slideshow on your television or schedule a program recording when you are away from home using the Internet. But, before you can begin to think about which of TiVo's features you would like to use most, you must set it up properly. Keep reading to find out how.

Gather Your Materials

Before you set up your TiVo, make sure you have all the equipment you need.

First, find the 15-digit TiVo Service Number that will activate your TiVo DVR service. It is on the side of the box, just under the UPC bar code. Sometimes it is labeled as the TiVo Serial Number. Alternately, look on the back of the TiVo device near the bar code.

When you open the box containing your TiVo unit, you will find the Start Here poster, the User's Guide, and two bags labeled A or B. Open the bag of cables labeled A. There will be five items in this bag: a phone cord, a phone splitter, a power cord, a coaxial RF cable, and a composite A/V cable. If you are not familiar with these cable types, you can read through TiVo's Start Here poster for product pictures

and explanations. Bag B contains two cables, a 9-pin serial cable and an IR (infrared) cable that let your TiVo remote tell your cable or satellite box what to do. The IR cable has one end split into two angular emitters. You will also need the two included AA batteries for your remote control.

Throughout the Guided Setup, TiVo will need access to a telephone line, which surprised us. (We wondered what folks who have no landline would do to set up their TiVo.) Regardless, you will be able to move your TiVo away from the phone line after Guided Setup if you don't want the TiVo to remain there permanently.

Setting up a TiVo also takes time. Plan on spending approximately an hour and a half to set it up: five minutes to activate your TiVo, 10 to 20 minutes to connect all the cables, and about an hour to complete the Guided Setup to configure your TiVo for your location and connection type. After completion, it will need six to 10 hours to configure itself. During that time, you can watch TV, but you can't schedule programs to record. When the configuration is finished, you can use a wired or wireless home network instead of a

phone to update your TiVo's programming schedule.

Connect Your TiVo

To actually connect your TiVo, you need to have an active Internet connection. Go to www.tivo.com and click Setup & Support. Then click Activate Or Upgrade TiVo Service and fill in your TiVo Service Number and your email address. As you step through activation, you will enter your purchase information and choose your subscription. After all this, you are finally ready to connect your TiVo.

It's a good idea to put your TiVo box near your television so you can access the back of the TiVo, the inputs on your television, and the inputs and outputs on your cable or satellite box if you have one. As long as the power cord is connected last, the order in which you connect these devices does not matter, but our method worked well for us, so we'll step you through that.

If your setup includes an antenna or your television is cable-ready, you can skip to the next section, "Connect An Antenna Or Cable-Ready TV." If you have a cable or satellite box, you can go



Hidden Costs Of TiVo

In addition to purchasing the TiVo device and subscription service, you might need some additional items. Think of these items as accessories: They are not required, but they are a bonus if you get them. You can find them all on TiVo's Web site or (most likely) at your local electronics store.

For better picture and sound quality, you may want to use two composite A/V cables instead of using the one included A/V cable with one included RF cable. If you do not have a second A/V cable on hand, you can purchase an additional A/V cable for \$5 to \$30, depending on the length of the cable. For increased performance, you can purchase S-Video cables and use them in addition to the A/V cables. S-Video cables are \$5 to \$15. Details for this setup are on page 173 of the User's Guide. If you connect your TiVo to your home network, you will need a network adaptor. Wireless versions are around \$30 to \$50, and wired ones are \$30 to \$45.

Finally, you can add TiVoToGo, a feature that transfers a show from your networked Series2 TiVo to your PC. TiVoToGo requires a computer with Windows 2000/XP that supports the MPEG-2 (Moving Picture Experts Group-2) codec, which compresses and decompresses data. Compatible codecs for WinXP cost \$15 to \$20. Win2000 users can download a free open-source codec. You can find a link to compatible codecs in the Support section of TiVo's Web site.

to the "Connect A Cable Or Satellite Box" section.

Connect An Antenna Or Cable-Ready TV

First, locate the existing signal source for your television. Your signal could come from a wall jack for a cable source, a wired antenna housed in the attic or on the roof, or a rabbit-ear antenna on your TV. Your TV gets its signal through an RF cable connected to this source. Look at the back of your TV in the RF In or Antenna In area and locate an RF cable like the one that came with your TiVo. The cable may be a different color, but the end should look the same. The opposite end of the cable should be attached to one of the signal sources we mentioned previously. Disconnect the end of the cable that is attached to your TV. Now, attach that end of the RF cable to the RF In connector in the Cable/Antenna section at the far right of the back of the TiVo.

Once all this is done, your TiVo will finally receive a signal to record, but you'll have to connect the TiVo to your television before you use it. First, look at the back of your television. If

you see the red, white, and yellow composite input jacks for an A/V cable, connect the cable to the like-colored Audio/Video Out jacks on your TiVo and the like-colored Input jacks on your television. Some televisions have multiple sets of A/V inputs. Choose the primary set, often labeled Audio/Video Input 1.

If you do not have the composite inputs on your television, you should connect it and TiVo using the RF cable. The RF Out jack on the TiVo is at the far right in the area labeled Cable/Antenna. Connect the cable from this jack to the jack on the television labeled Antenna In or RF In. Next, note the position of the Channel switch on the TiVo; you will need it later during Guided Setup so you can tune your television to the correct channel. Finally, connect your TiVo to your phone jack.

If your phone jack is not near where you want your TiVo to remain permanently, you can connect your TiVo to your home network and disconnect it from the phone line after you finish the Guided Setup.

Now insert the power cord in the TiVo and an electrical outlet.



If you're using this setup, you can go ahead and skip to the "Guided Setup" section.

Connect A Cable Or Satellite Box

Before you connect your TiVo to your cable or satellite box, double-check that the coaxial cable connecting the box to the wall signal is securely connected.

Next, use the A/V cable to connect the box to your TiVo. If the Audio/Video Out jacks on your box are already connected to a cable, disconnect the cable from the box. Insert the red, white, and yellow A/V connectors into the three like-colored Audio/Video Out jacks on the box. Connect the opposite end of the A/V cable to the like-colored Audio/Video Input jacks on the TiVo.

Now your TiVo will receive a signal to record, but to actually watch or record TV, you still need to connect the TiVo to your television. Check out the back of your television. If your TV has colored composite A/V input jacks and you have an extra A/V cable, connect the cable to the like-colored Audio/Video Out jacks on your TiVo and the like-colored Input jacks on your television.

Some televisions have multiple sets of A/V inputs. Choose the primary set, often labeled Audio/Video Input 1.

If you do not have the colored input jacks or an extra A/V cable, connect your television and TiVo using the RF cable. The RF Out jack on the TiVo is on the far right in the section labeled Cable/Antenna. Connect the cable from this jack to the jack on the television labeled Antenna In or RF In. Make a note of the position of the Channel switch on the TiVo; you will need it later to tune your television to the correct channel.

Next, open the cable bag labeled B. You only need one cable from this bag to complete this step. To decide which to use, look at the back of your cable or satellite box. If you see a 9-pin serial input, use the serial cable. Otherwise, use the IR cable.

To connect the serial cable to your cable or satellite box, attach the serial connector on the cable to the serial input on your box. Insert the other end of the cable into the Serial In port in the Control Out section on your TiVo.

To connect the IR cable, insert the connector into the IR port in the Control Out section on your TiVo. Now find the IR input sensor on your cable or satellite box; TiVo describes it as "a tiny round bulb" and suggests that you "shine a flashlight into the dark plastic 'window'" on the front of your cable box to help find it. Then pick up the box and put one of the two cables (that are split on one end of the IR cable) under the box and lay the other cable above the box. Position the angular portions of each cable about 1-1/2 inches in front of the box pointing at the IR sensor. Prevent them from moving with the adhesive strips that came with the TiVo.

Now connect your TiVo to a phone jack. If your phone jack is not near where you want your TiVo to remain

Subscription Choices

Consumers have two choices for the TiVo service subscription. The monthly subscription costs \$12.95 per month, and it's automatically billed to your credit card. The lifetime subscription is a \$299 one-time fee, but this is only good for the life of your device; if your TiVo breaks or you decide to upgrade, you cannot transfer the old subscription to the new device. Also, if you have multiple TiVo boxes, you must purchase a subscription for each one. However, you can get a discounted rate for the additional monthly subscription. TiVo charges \$12.95 per month for the first unit and \$6.95 per month each for up to five additional units. ●

Future Of TiVo

Will TiVo last? Cable and satellite providers are offering on-demand programming and joining the list of DVR service providers. On-demand programming and TiVo have a similar concept: watch the shows you want whenever you have the time.

Years of operating losses and rumors of bankruptcy or buy-out left questions about the longevity of TiVo. However, smart business deals are increasing TiVo's chance for independent success despite the increase in DVR services offered by cable and satellite companies. TiVo and DIRECTV partnered to provide customers with DVR service and satellite reception in one unit. In March, TiVo announced a new deal with Comcast, the leading cable provider in the United States. Comcast is expected to incorporate the TiVo brand with its DVRs by mid to late 2006 in most of Comcast's markets. The deal gives TiVo increased earning power and access to millions of homes across the country. ●



TiVo Models

TiVo mentions all of the models listed below on their Web site. You can buy several of the models directly from the site, and you will find information on TiVo's Web site about where to buy the models that aren't available directly from TiVo. Explore all of your options to find the best fit for your needs.

TiVo Series2: Offers the most diversity of features with support for TiVoToGo and networked TiVos. Choose among 40-, 80-, and 140-hour models for \$199.99, \$299.99, and \$349.99, respectively.

DIRECTV DVR with TiVo: Combines the satellite receiver and TiVo functionality in one unit. You can buy a 40GB box for \$99 and then subscribe to the service for an additional \$4.99 per month (or free for TOTAL CHOICE PREMIER customers).

Humax Series2 DVR: Offers same signal support diversity as TiVo Series2. Choose between 80- and 300-hour recording capacities.

Humax DRT-800 DVD Recorder with TiVo: Burn programs to DVD and use as a DVD player. Has an 80-hour capacity for \$499.

Toshiba DVD Recorder with TiVo: Burn programs to DVD. Comes with free TiVo Basic service, offering limited features such as pausing live TV and recording programs. Upgrade to TiVo Plus service for full access to TiVo's features. Choose models with 140 or 200 hours of recording time.

Pioneer DVD Recorder with TiVo: Burn programs to DVD. Comes with TiVo Basic, which offers limited features such as pausing live TV and recording programs. Upgrade to TiVo Plus with standard TiVo service fees for full access to TiVo's features. Choose 80- or 120-hour recording capacities. ●

permanently, you can connect your TiVo to your home network and disconnect it from the phone line after you finish Guided Setup.

Finally, insert the power cord in the TiVo and an electrical outlet.

Guided Setup

Your TiVo should power up after you plug in the power cord. Turn on your TV to make sure you can access the Guided Setup. If your TiVo and television are connected with the coaxial RF cable, tune your TV to the channel you noted earlier. Otherwise, press the Input button on your television remote control until you see the Guided Setup on-screen.

Use the circular button with four directional arrows on your TiVo remote control to navigate through the step-by-step instructions that appear on your TV screen. You can change your answers on any previous screens at any time. If you need guidance during the Guided Setup process, consult pages 26 to 30 in the TiVo User's Guide for tips and troubleshooting information. Overall, the Guided Setup process is simple, easy, and well-explained. However we ran into one problem that we thought was kind of confusing.

Guided Setup automatically makes two phone calls. The first call uses a 1-800 number, so while you are answering the first series of questions, you need to tell TiVo if it needs to use special calling circumstances to complete the 1-800 call, such as if you need to dial '9' to get an outside line using your phone line. During this call, TiVo looks up local phone numbers and automatically uses them in the future, but it might not find a local number for your area code. If this is the case, use the Left arrow on the remote control to return to the page where you can enter a different area code in your region. Then use the Right arrow to access the Setup Call page and repeat


the 1-800 call. Remember, the first call is toll-free so you do not have to worry about teaching your TiVo to use dialing formats for the area code yet.

After the 1-800 call completes, you'll have to select a phone number in your region. Then it will ask for information about how to place this local call, including 10-digit dialing or requiring a 1 to make the call. Keep in mind that long distance charges may apply if a local number is not available.

Once you complete the Guided Setup, TiVo will take you to the TiVo Central screen. Remember, you can watch television and use the pause and rewind features immediately, but you must wait six to eight hours before you can schedule recordings.

After you have completed the Guided Setup, you may choose to connect your TiVo to your home network so that it will access information updates and programming information via your Internet connection. You can find a list of recommended network adapters at www.tivo.com/adapters and more information on establishing a wired or wireless network connection in your TiVo User's Guide on pages 106 to 121.

Enjoy Your Life

The process of setting up our TiVo was a bit intimidating at first, but if you follow our example and take a logical approach to it, it can be a breeze. And the results are rewarding: You can forget about scheduling your life around television shows. If your best friend calls in the middle of your favorite TV hour, you can give her your undivided attention without missing a minute. You might even understand Miranda's motives after seeing for yourself how great television with TiVo can be. 

BY DACIA L. ROLANDO

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The Great Home Movie Makeover

Transfer From VHS To DVD With A New Combo Unit

Do you know where your home movies are? Perhaps they're stashed on a shelf collecting dust. Or possibly they've found their way into a shoebox "filing system" in a back closet. Or, better yet, maybe they're the only VHS tapes left taking up room in what is now your extensive DVD collection. Whatever the case, it's probably time to give your home movie collection a facelift.

Although it may sound intimidating, breathing new life into your old home movies is relatively simple with a DVD-recorder/VCR combo unit. While transferring VHS tapes to DVD used to require a souped-up computer or two units hooked up to a single TV, the combination unit has made all of that a thing of the past. Like any product, DVD-R/VCRs are available at a variety of price points. Although there is a lot to wade through when choosing the product that's right for you, it often boils down to the features.

Once you have decided on a unit, all that's left is to select the type of media you'll use. Recordable DVDs, like CDs, come in both one-time writeable and rewriteable formats. There are several types of discs on the market, so make sure your DVD/CD player supports the recordable media before you buy it. You may also want to make sure discs you record will be compatible with any DVD players you already own. Although a unit may use multiple formats, they are not necessarily interchangeable.

When you're ready to hook up your new unit, choose the highest-quality cable that your TV will accept. Although some units come with a basic composite cable, you may want to spring for an S-Video cable, and if your TV is compatible, a component cable. (See the "Get The Hookup" sidebar for more information on choosing the right connection.)

Get Organized

Now that you're ready to roll, dust off your VHS tapes and get organized. We found that it can be a bit overwhelming to sit down with a stack of tapes and no direction. The time you'll want to invest in this step really depends on what your

Shop Around

Sony RDR-VX500
\$499.94 • www.sony.com

Toshiba D-VR3
\$399.99 • www.toshiba.com

Panasonic DMR-ES30V
\$349.95 • www.panasonic.com



goal is. If you simply want to copy exactly what is on your VHS tape to a DVD, this step is really unnecessary. But if you want to delete sections and put clips from multiple tapes on a single DVD, this step will prove to be well worth your time.

If the latter is the case, make yourself comfortable and watch your VHS tapes. Although you don't have to watch them in their entirety, we found it helpful to fast forward through the tape while it was playing and make notes of things we wanted to keep. For example, if you want to put all of Junior's birthday parties on one DVD, you'll want to track them all down and have them in order. That way you'll be able to switch out tapes as needed without fumbling around during the dubbing process.

The One-Button Wonder

Many units on the market have a one-button dubbing function. For those tapes that you want to transfer to DVD in their entirety, this is the only way to go. We had two 30-minute tapes we wanted to transfer, as is, to a single DVD-R. After putting the DVD-R and tape No. 1 in the Toshiba D-VR3 (\$399.99), we pressed the To DVD button on the front panel, and the unit did the rest. The only work involved with one-button dubbing (if you can call it work) is making sure you stop the DVD when the tape is over; otherwise, you'll record the blank screen onto your DVD-R. Because DVD-R is a one-time recordable disc, you won't be able to record over the dead air or edit it out. We weren't paying close enough attention near the end of the first tape, so we

recorded some dead air. Although it isn't much, we ended up with 60 seconds of "snow" between the chapters on our new DVD. After we stopped the tape, we put in No. 2 and repeated the process.

After the dubbing is complete, you can create chapter titles for easier viewing later. Default titles include the date and time you created the DVD; however, you can personalize them by using the remote to select numbers, letters, and symbols that appear on the screen. Although your new DVD is ready to play on your DVD recorder, if you want to play it in other DVD players, you'll need to finalize the disc. Back at the Setup menu, select Disc Manager and then Disc Finalize. When prompted, answer Yes to the questions, and in a few minutes, you'll




be able to watch your DVD on any compatible player.

Piece It Together

Although the actual dubbing works the same in the manual setting, the setup is much different and more time consuming. But if you want to edit out parts of a tape, learning how to use this setting will be worth it. With our DVD-R and VHS tape in place, we reached for the remote instead of pressing the Dubbing button. Pressing Menu on the remote takes you to the Setup screen where you'll want to select VCR → DVD. The input screen will have a small viewing window on the left with a counter beneath it and a menu on the right where your scene selections display.

Once you've found where recording should begin, press Enter, fast forward to the point where you want recording to end, and press Enter again. Simply repeat the process until you've entered all of the segments you want to dub. To begin recording select Copy All. You can create up to six scenes in a single session. If you have more than six scenes, repeat the process after the first session is complete, and the DVD will pick up at the end of the first set. As long as you don't finalize the DVD, you may continue adding to it as long as there is room left on your disc.

Sit Back & Enjoy

Although it may take you awhile to figure out all the ins and outs of your particular model, the DVD-R/VCR will prove to be a valuable addition to your home entertainment center. When you've finished your masterpiece, you will have a home movie you can be proud of. And in time, you'll have a collection worthy of sharing shelf space with the rest of your DVD collection. Now if you can only convince someone to come over and watch them with you... 

BY JOY MARTIN

The VHS-DVD Face Off

Although there is something to be said for holding on to your VHS tapes—there are still people who don't have a DVD player—transferring to DVD will become more of a necessity than a luxury in the future. Although the jury's still out on DVDs for some people, there are several advantages to taking the plunge now.

This is another case in technology where size does matter. VHS tapes take up more room, plain and simple. To make storing your DVDs even more space efficient, you can purchase a DVD wallet that neatly stores your home movies in sleeves.

There is also the ease-of-use factor to consider when comparing VHS to DVD. With VHS, it is difficult to find a specific place on a tape. You can create DVDs, on the other hand, with chapter markers so you can quickly find the precise moment Suzie blows out the candles on her cake without the headache of aimlessly rewinding and fast forwarding.

But perhaps the biggest advantage DVD has over VHS is durability. Although it's true that scratches may affect the quality of your DVD or even prevent it from playing, physical damage is the only thing that will shorten the life of your DVD home movies. With VHS, mechanical components touch the tape during playback, and over time, repeated use of a tape actually wears it out, resulting in poor picture and sound quality. VHS tapes typically last from 10 to 15 years; however, DVDs generally last at least twice as long and maybe longer. Because a laser reads a DVD, nothing actually touches the disc, so you'll enjoy decades of repeated playback with no degradation in picture or sound quality.

And be sure to remember that until the entire family moves into the digital age, you can still hold on to those VHS tapes. Now you can simply have a better, easier-to-use copy that will be around for generations to come. ●

Get The Hookup

When hooking up your new DVD-R/VCR, decide what kind of cable to use to connect the unit to your TV. Although connection options were once limited, that's not the case today. Home entertainment equipment comes with a range of choices; however, not all units have every type of connection. Below is a list of common connections and how they perform.

Composite video. A single connection that carries luminance (or brightness) and chrominance (or color) signals to your TV. Sometimes, composite video cables are accompanied by right and left audio cables.

S-Video. Signals are divided into two cables, one for luminance and one for chrominance. Because the signals are divided, and therefore processed separately, S-Video creates a clearer picture than composite video.

Component video. Component video features three connections: one for luminance and two for color. This further separation prevents color bleeding and makes component video connections superior to either composite or S-Video; however, not all TVs have component video jacks.

In addition to the more common connections, some units have connections that go beyond the basics. These jacks, often conveniently located on the front panel, let you hook up a camcorder and stream your video without crawling around back to hook up connections.

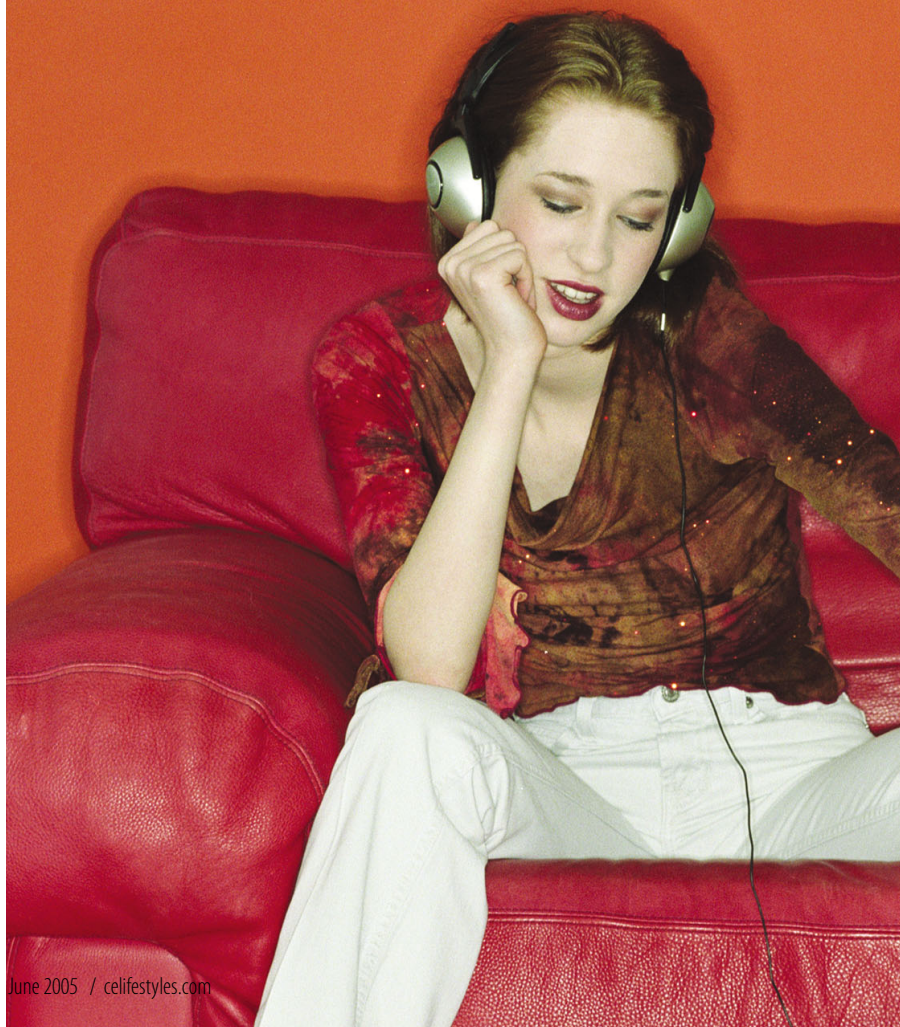
IEEE 1394. Sometimes called FireWire or i.LINK, this jack lets you connect directly to your digital camcorder, bypassing the VCR all together. ●

Music To Your Ears

You Can Have Style, Comfort & Great Sound

H

eadphones are all around us. It sometimes seems like everything you buy comes with a pair of headphones, so the idea of paying to replace a free set might seem strange. Depending on how you listen and how often you use them, though, investing in higher-quality headphones could be a good idea. The free headphones included with most players are often unreliable, uncomfortable, and produce poor quality sound. If you experience any of those problems, consider an upgrade.



Types

When you shop for headphones, you'll see an array of options. Distinguishing among the types of headphones will help you decide what's right for you.

Ear buds. Ear buds are the most common headphones packaged with portable devices. They fit just inside your ear without extending into the ear canal. Shapes and materials vary (though they're usually round and hard plastic), but they all work in the same way. Replacing ear buds is easy and affordable (including the \$5 Koss P4; www.koss.com). You can find and buy a new pair without much trouble, but why? Unless you want to achieve a more comfortable fit, basic buds are more or less interchangeable.

In-ear. In-ear headphones fit in your ear canal, delivering sound more directly and blocking ambient noise. Most are made of soft, pliable plastic that molds itself to the shape of your canal. For that reason, many people find them more comfortable than ear buds. If you wear headphones often and want to block external sound without spending a lot on a noise-canceling model, in-ear phones (the Sony MDR-WO8L start at \$10; www.sonymstyle.com) may be right for you. Try a pair first, though; some people find that the ear-plugs feel invasive.

Open air. Headphones with open "cups" sit over your ears (called **supraural**) and pour in sound. They're more likely than other types to pour sound into the area around you, too. Lower-quality versions are often cheaply made headphones, so

it's no coincidence you get them free on airplanes. If ear buds and in-ear headphones bug you, and you don't want to pay much (the Altec Lansing AHP212 behind-the-head model costs \$10; www.alteclansing.com), open headphones are for you. If you want good sound quality and durability, they probably aren't.

Closed cup. Closed headphones cover the ears in "cups," encircling and enclosing your ear (**circumaural**). They also block some ambient noise, and many people consider them the most comfortable headphone for extended use. They're usually bulky and aren't particularly portable. And they can be expensive (Aiwa's HP-X223 is entry-level at \$30; www.aiwa.com). If you're not concerned about portability, and are willing to pay a little more for comfort and quality, check out the variety of closed headphones.

Wireless. Wireless headphones recently departed the world of bleeding-edge technologies, where a single feature makes up for an overall lack of reliability and affordability. You can find affordable models that sound decent and work well, but there aren't many. The \$60 RCA WHP140S (www.rca.com) are relatively inexpensive and have decent sound. Wireless headphones usually have battery-powered headsets containing a wireless transmitter that communicates with a powered base broadcasting from the audio source. Look for headsets with rechargeable batteries that charge from the base. Most wireless systems have a range of about 100 feet, but the signal degrades with distance. A wireless headset gives you some freedom to roam around your house without trailing wires, but the base, which transmits signals from the audio source and broadcasts them to the wireless headset, doesn't allow true portability.

The portability issue is the paradox of wireless headphones; wireless makes them more portable within range of the base (no cords to trail), but the need for a



Noise-canceling earphones, such as the Sony MDR-NC6, help block ambient noise.

powered broadcasting base connected to an audio source means the whole setup (base and headset) isn't easily portable from system to system.

Features

Across earphones types, there are plenty of feature options. Some are specific to particular types; others apply to all headphones. Some features add significantly to the price, others don't. We'll help you sort through the features and figure out what works best for your tastes.

In-line volume. Many models include volume controls built into the cord. These controls adjust headset volume separate from the player device. Some models (most notably closed-cup headphones) also build volume controls into the headpiece. In general, you're more likely to find in-line volume controls on better-quality consumer models, but it's not a feature you should expect to pay extra for on its own.

Plugs. Almost all audio devices use standard "mini jacks" (3.5mm), and most headphones use this size by default. However, some closed-cup and high-end

models intended for home-audio components use 1/4-inch stereo jacks. You'll also find models with dual-jack converters (often used on airplanes). Dual plugs are useful if you fly a lot and want to listen to the airline's radio stations without paying to rent headphones.

Headset form factor. Traditional over-the-head earphones fall off easily and mess up your hair. So open-air (and some in-ear) models come in other configurations. Behind-the-neck, behind-the-ear, and clip-on models are common. Sport models with a funky look may cost a little extra, but most behind-the-neck and behind-the-ear models are about the same price as their traditional, over-the-head counterparts.

Cord length. The length of headphone cords is a never-ending struggle between "long enough to allow movement" and "short enough to avoid tangling and tripping." Most cords are between 3 and 5 feet, though some models designed for home stereo or home theater have much longer cords. Consider how you listen (Do you often move far from the audio source?) and how you store the headphones (Do you pack and unpack them with each use?). Retractable traveling earphones, which are normally of the earbud type, are prone to breaking and tangling. We don't recommend retractable-cord headphones unless portability is of the essence and you're willing to replace them occasionally.

Noise canceling. Perhaps the coolest and most misunderstood headphones are the noise-canceling variety. A large part of noise canceling is sealing your ear from external sounds. Thus many noise-canceling models are closed-cup. Actual noise-canceling technology samples the listening environment and adjusts its signal to counteract ambient noise, increasing the intensity of sound and washing out anything else. The technology is far from perfect, and you'll have to spend a lot for great noise-canceling

Price Headphone Models

You can spend as much or as little as you'd like on headphones because prices are all over the map. Here are some examples of what you can expect for each type at the low, medium, and high end of the spectrum. In general, you can expect more comfort, better sound, and more features as you move up in price.

| | LOW | MEDIUM | HIGH |
|----------|-------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| EAR-BUD | Koss P4 4-foot cord, \$5 | Sony MDR-EX51LP 4-foot cord, two bud sizes, \$40 | Shure E3c 5-foot cord, ear sleeves kit noise canceling, \$150 |
| IN-EAR | Sony MDR-WO8L 3.3-foot cord, \$10 | Koss The Plug 4-foot cord, \$20 | Sony MDR-NC11 AAA battery, noise canceling, in-line volume, \$150 |
| OPEN | Altec Lansing AHP212 behind-the-neck, \$10 | Sony MDR-NC6 3-foot cord, noise canceling, \$60 | Sennheiser HD595 10-foot cord, stereo (1/4-inch) plug, \$250 |
| CLOSED | Aiwa HP-X223 9-foot cord, \$30 | Sony MDR-V600 10-foot cord, bass drivers, \$100 | Philips HN050 5-foot cord, noise canceling, \$170 |
| WIRELESS | RCA WHP140S closed-cup, charging base, \$60 | Sennheiser RS65 closed-cup, 100-foot range, simulated surround, \$190 | Pioneer SE-DIR800C closed-cup, 26-foot range, Dolby Digital 5.1, digital inputs, \$399 |

headphones. But if ambient noise is an issue, and you're willing to pay the price for great technology, noise-canceling headphones will make a big difference.

Bluetooth. More and more portable devices are Bluetooth-enabled. **Bluetooth** is a wireless technology (with a range of about 30 feet) that lets compatible devices communicate with one another. Wireless Bluetooth headphones and headsets work with Bluetooth-compatible media players, PDAs, mobile phones, and other devices. Bluetooth headphones aren't common, but for audio devices with Bluetooth technology, matching headphones are worth exploring.

Products


The type of headphones you buy, as well as their features, need to match the products with which you'll be using them. We'll cover some of the more common audio devices and talk about which headphones work best with each.

Portable media players. The exploding portable media market is fueling growth in replacement headphones. Almost all music and video players come with a pair of basic ear buds, and for good reason. Their small size and light weight make them a perfect fit for portable digital media. If your players' earphones are uncomfortable, or if you want a higher

quality set, explore nicer ear buds or in-ear models, perhaps with noise-canceling technology or in-line volume controls. Open- and closed-cup headphones are probably too bulky to go with a portable player, and wireless models are unnecessary when the player fits in your pocket.

Portable DVD players. DVD players usually come with a pair of ear buds. Because they're larger than portable music and video players, medium-sized open- and closed-cup headphones won't be such a mismatch. Again, if you're after greater comfort, look at in-ear and closed-cup earphones. Both types also help block ambient noise.

Home entertainment. For the greatest enjoyment of audio at home, with stationary equipment, the comfort and convenience of closed-cup or wireless headphones may override their costs. Ear buds and in-ear models generally have shorter cords, which limits their utility from across the room, and they're usually compatible with the smaller jacks on portable equipment. Larger and more robust headphones are more likely to fit the larger (1/4-inch) jacks of home audio components, though many models come with adapters.

Dual-purpose devices. If your audio device doubles as a mobile phone or voice recorder, a new earphone breed combines earphones with the features you'll find in hands-free microphone products. These models combine two gadgets into one—always a welcome proposition if you've overloaded purses, pockets, or travel bags. Check jack sizes before you buy. Audio devices use mini (3.5mm) jacks, and mobile phones generally use 2.5mm jacks. If the headphones don't match your device, look for an adapter. If you want to simply listen to tunes piped through your computer, you can also find headphone/microphone combinations (called headsets) for less than \$10. 

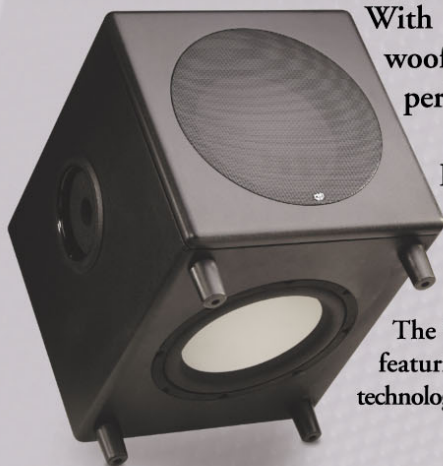
By GREGORY ANDERSON

"When paired with a suitably high-end A/V receiver, the RBH CT-MAX will rock your home theater to its foundations."

- Steve Guttenberg, *c|net.com*

In either stereo or multichannel modes, the RBH excelled at producing a cleanly defined soundstage, with imaging uncluttered by any hint of a box or multiple drivers...The result is that the Compact Theater convincingly disappears as a sound source.

-Neil Gader, *The Perfect Vision Magazine*



With its die-cast aluminum construction and aluminum woofers, the RBH CT-MAX delivers "foundation rocking" performance, yet won't rock your budget to its foundations.

RBH's Compact Theater systems offer the unparalleled value and incomparable attention to detail which have come to be expected from RBH.

The CT-Max is also available with the MS-10.1, featuring dual 10-inch active woofers, RBH's TAV™ technology and a 250-Watt RMS built in amplifier.



**Redefining the way
you experience sound.™**

tips

Troubleshooting DVD Problems

1

Put The Hurt On Dirt

DVDs have much larger capacities than archaic VHS tapes, but DVDs are also much more vulnerable to careless handling and the dusty detritus that floats through our homes. So when you have a DVD that won't play properly, hold your disc up to a bright light and tilt it from side to side so that you can examine it for fingerprints, sticky smudges, and scratches. If you detect any potential problems, gently use a lint-free cloth to wipe dirt out of the way. Avoid using a circular motion. Instead, wipe straight from the hub to the outer edge of the disc. You can use a gentle, liquid hand or dish soap, as well as some warm water to loosen stubborn grime, but gently and thoroughly dry the disc before playing it.

2

Swap It Good

If your DVD won't work properly in your standalone player even after you've cleaned the disc's surface, use another standalone player in your home or take the disc to a friend's house and ask her to try the DVD in her players. You may also insert the DVD into your computer's DVD drive and try to play the disc's contents with your video software. If the disc works in a PC but won't work in your player, see our next tip.

3

What's Your Sign?

If you rented the DVD from a local movie store, the disc should be compatible with your DVD player, but if you're trying to play back data stored on a recordable or rewriteable DVD, check to make sure the disc is compatible with your player. There are two competing standards for recordable DVDs, including DVD-R and DVD+R, along with their re-writeable brethren. Not all players play these disc types. Check your player's specifications or call the manufacturer for more information.

4

Like Nails On A Chalkboard

If you buy a specialty DVD that was manufactured in another country, there's a strong possibility that the disc will give you fits when you try to play it on an American-made DVD player. If the disc is from a country that uses the PAL (Phase Alternate Line) video standard, your player might have to perform a PAL-to-NTSC (National Television System Committee) conversion before the disc's contents will display properly on NTSC TVs sold in the United States. To combat this problem, you can buy an expensive converter or a DVD player with PAL conversion capabilities. Better yet, avoid this problem to begin with by verifying that the DVD is made for NTSC players. PAL-formatted discs usually have a PAL DVD logo on the packaging.

5

Regional Restrictions

DVD manufacturers assign one of six region codes to the discs they create; for example, the U.S. and Canada are in Region 1, and China is in Region 6. In situations where studios want to restrict new releases to a specific area of the world, these codes are supposed to help movie studios protect their copyrights by preventing players built in one region from playing DVDs from another. If you wind up with a disc intended for another region, you have two options. You can return the DVD and wait until it becomes available in your region, or you can buy a so-called region-free (sometimes called a Region 0) DVD player that will play a disc with any region code.



BY NATHAN CHANDLER

Great theater deserves a great setting.



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Whole-House Audio

The Music You Want,
Where You Want It



Whole-house audio is becoming quite the rage these days, as more and more people strive to easily pipe high-quality, controllable audio into more than one or two rooms of the house.

Most audio buffs have a music room, after all, but only one. Leave that room, and the walls, floors, and furniture muffle the sound. The farther you move away from the room, the weaker the sound becomes, until you hear the sound only faintly or not at all. Increasingly, homeowners want audio throughout the house instead.

There are so many ways to put together a whole-house audio system that an entire book would be necessary to present all the possibilities. Essentially, though, whole-house audio falls into two major categories: single-source or multisource. If you never plan to do anything more elaborate than play the same CD, radio station, or MP3 mix throughout your house, you need only one source. However, if you want to be able to play, let's say, a CD in two rooms and a radio station in two others, you need a significantly more complex setup.

Set A Clear Goal

Once you've determined which of these two configurations fits your needs, your next step is to put it into place. Before starting, though, do some thinking as to what you want your sound system to accomplish. Let's explore some possible scenarios.

Sonance iPort

Sonance (www.sonance.com) has established itself as a company with options for whole-house audio components, especially since the release of its iPort, an in-wall docking station for Apple's iPod. The iPort is hardly inexpensive at \$598, especially because it does not include the iPod, but if you already store your music on your iPod you may want to consider this device.

The iPort connects to your audio system via Category 5 Ethernet cabling that runs through your walls. An iPort has two main parts: the wall cradle, where you place your iPod to play music through your whole-house audio system; and the wall plate, which connects to your audio equipment and provides power for the iPort components. You can install multiple cradles throughout your home, and you can configure each to default to the iPod's music when you place the iPod in the cradle. Sonance also offers an in-wall keypad and an IR receiver that let you control your iPod's functions.

So, is the iPort for you? If you're a heavy iPod user, certainly, but be aware that it requires professional installation. If you already have in-wall wiring for your audio system, you could likely have the device installed by an iPort dealer for around \$100. If you don't have in-wall wires, Sonance estimates that installing the cable and the iPort should cost around \$100 to \$300 in most cases. Ultimately, the final cost depends greatly on the size, location, and floorplan of your home, especially in an older house where stringing wires through the walls could be difficult; so get an estimate from an iPort dealer before proceeding. ●

Pipe a CD throughout the house. This is the simplest form of whole-house audio. Let's say you're having a dinner party or a small wedding reception. You want to play a selection of CDs at a consistent volume in each room where your guests may gather. If you need more or different CDs, you'll head for the music room and make the changes.

Here, your needs are basic: You need a single music source (the CD changer) in a single location and you need speakers in every listening location. If your house has a relatively open architecture, you might be able to place one or two sets of speakers in central locations.

Change the music and volume from multiple locations. Halfway into your dinner, a new CD loads and sounds about twice as loud as the previous one. You race to the music room, drop the volume, and return to overhear guests saying how much they like jazz, but you're playing soft rock. You head back to the changer to load some jazz. And on it goes.

Fortunately, some systems let you change the music and volume from where you sit or at least from within the same room. You can control your audio remotely, letting you switch not only from CD to CD but from music source to music source.

Section the house into multiple zones. Your party has split into three groups: your kids in the basement, your friends in the kitchen, and your colleagues on the backyard deck. The musical tastes of the three groups differ completely, and you'd like to satisfy all of them.

A multiple-zone system lets you accomplish this. A **zone** is an area of the house that is covered by one set of speakers playing one sound source. Multiple-zone systems let you play audio from different sources on speakers in each room. You

can pipe whatever audio you prefer into whichever room you choose, and if you have the proper system, you can switch the audio from multiple rooms. Because of its increased complexity, this kind of setup presents the greatest number of installation issues. Therefore, be prepared to pay a professional installer to do the installation for you.

Any listening area (which could range from two rooms to an entire floor) can be a zone. You must determine how your house can accommodate the best possible listening areas. For instance, if you have a relatively open main floor, you might decide that it represents only one zone, while a floorplan divided into several rooms might require several zones.

Know Your Zones

Whole-house audio systems are composed primarily of the same kind of equipment used in a standard component stereo system (as opposed to a standalone stereo system).

Deciding what components to buy corresponds with how many audio zones you need for your home. Consider each common sitting area a zone, especially if they are separated by walls. If guests frequently stay with you, consider making each guest room a zone, so that each room can have its own audio controls.

One trick to creating an effective zone is to determine how well sound travels within a specific area. If you plan to expand your house in the future, estimate where any new zones might be located and decide whether you will want your audio system to reach them. Of course, also consider what quality of sound you need. If you need soft background music in one zone, you can use a much less powerful system than if you want to provide intense listening.

Select Appropriate Components

The control room is the hub of the whole-house audio system. This room contains your audio sources, amplifiers, and whole-house controllers.

Each zone needs its own speakers, and while the costs multiply as the quality increases, you have control over how much you spend to get the sound you want. To set up your system, you can run the wires from the amplifier to the speakers along the baseboards or under the carpets and around the door frames. For a more visually pleasing option, you might want to run the wires through the walls and ceilings. To do so safely and neatly, you either need to be extremely good at this kind of home renovation or (better still) you need to hire a contractor. (The store where you purchase your whole-house audio equipment should know local professional installers, so ask for suggestions.)

If you want to remove speakers from sight, numerous companies offer in-wall and in-ceiling speakers. With the right surface, they're unobtrusive and, in fact, nearly invisible. For example, Preference series speakers by OEM Systems (www.preference-audio.com) range from \$319.99 for a pair of 6-1/2-inch round, in-ceiling speakers to \$529.99 for a pair of eight-inch rectangular, in-wall speakers.

Wires, Wires Everywhere

Despite the wireless revolution that lets us share an Internet connection around the house, audio systems still love wires. Look behind the equipment in a typical home theater setup, and you'll get the idea. (Check out "Clutter-Free Audio" on page 45 for more information about wireless options.)

Do You Need Whole-House Audio?

To determine if you need a whole-house audio system, check the applicable boxes below.

- ☐ When I entertain, I like to have music in all areas in which guests congregate.
- ☐ The layout of my house is broken into several areas by walls and floors, and sound travels poorly between them.
- ☐ I want to select the music playing in the house from a variety of locations throughout the house.
- ☐ I want different music in the family room, living room, and deck, and I don't want to have separate audio systems in each room.
- ☐ When guests stay at the house, I want them to have their choice of music when they retire to the guest rooms.
- ☐ Fighting with my kids over the main stereo system has lost a considerable amount of its charm.


If you checked items 1 through 3, you should consider at least a single-source whole-house audio system. If you checked 4 through 6, you'll need a multizone system. Of course, if you checked item 6, you might want to get your kids a stereo system for their own rooms or possibly a nice guest house somewhere, but the idea is the same. ●

For any whole-house audio system, you need to run speaker wires from the amplifier in the control room to each set of the system's speakers throughout your home. This often requires running the wires through walls and ceilings.

For in-wall or in-ceiling wiring, we recommend again that, unless you're experienced and competent doing this work yourself, you should hire a contractor to do the installation. If you have the skills to do it yourself, you must use rated cables to meet electrical safety requirements and ensure you don't invalidate your insurance coverage. Request Category 2 or 3 speaker wire from a computer or audio store. Standard speaker wire should run outside the walls, so it doesn't bear official ratings.

Next, choose the speaker wire gauge. You really have only three practical choices here: 12, 14, or 16 AWG (American Wire Gauge). The smaller the AWG rating, the thicker the cable, which gives you less resistance. This means your wire will lose less power while your system is on. Speaker wire is an area where you should buy the best you can afford, especially if you need wire lengths greater than 100 feet, so invest in 12 or 14 AWG.

Your Home Is Your Studio

Setting up a whole-house audio system takes time and money. To get the installation and sound right, you should hire a professional audio installer. But even a simple whole-house audio system can change how your guests feel, no matter where they are in your home. You can give them the music they want when and where they want it, and what could be better than that? 

BY NEIL RANDALL

**Speakers should be heard, not seen.
That's why we put them in the screen.**



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Clutter-Free Audio

Set Up A Wireless Audio Network In Your Home



W

hen it comes to our homes, appearances matter to most of us.

No matter how cool the gadget, if it makes a home look like a tangle of unsightly wires, it's unlikely to be a favorite purchase. A home audio system is one of the most challenging items to try to incorporate into a home without ruining the aesthetics of your living space.

One of the best ways to fill a home with music without creating a mess of cables is to create a wireless audio network. Thanks to several user-friendly devices, it might be easier than you think to set up a top-notch wireless audio system in your home. We set up a home audio network using Slim Devices' Squeezebox2 Wireless (\$299; www.slimdevices.com).

The Elements Of Wireless Audio

To set up a wireless audio system, we needed several components, but we didn't have to buy many of them. We, like most people, already had audio equipment at home, so we used our existing receivers and speakers.

whole-house audio systems

Troubleshooting

Setting up our home audio network was much easier than we'd expected. Still, you may encounter a problem or two. Below are a few of the most common.

Instead of connecting directly to your network, Squeezebox2's screen lists several networks. If more than one wireless network is in the vicinity, Squeezebox2 will not know which is yours. Use the remote control to select your network from the on-screen list.

Squeezebox2 cannot find the network. If the device does not find a wireless network to which it can connect, it will prompt you to enter the name of your wireless network. Use the remote control's buttons in the same way that you would use a cell phone to send a text message and enter the name of your wireless network.

Squeezebox2 finds the network but cannot connect to it. If you have filters enabled through your router, you will need to configure the network to allow Squeezebox2 onto the system. One of the easiest ways to do this is to temporarily disable the filters; then use your router's configuration utility to check the list of connected devices. The newest device on your network should be the Squeezebox2. You can then add its MAC (Media Access Control) or IP address to the list of addresses allowed on your network.

You saved more music files to your PC's hard drive, but they don't show up on Squeezebox2's screen. You can tell Squeezebox to sync its list of tracks with those on your computer by using the remote control to select Refresh My Music Folder from the Squeezebox2 main menu. ●

We wanted to store all of our music on a PC but have access to any song from any room of our home at any time. We created a central location for all music by storing all of our music files on our PC. This setup worked well for the Squeezebox2 Wireless and saved us from having to run cables throughout the house to connect the PC to each room's audio equipment. Some of our favorite songs were on CDs, so we ripped CD tracks to our computer. You can do this using a variety of programs, including iTunes and WMP (Windows Media Player). Squeezebox2 supports most music formats, including AAC (Advanced Audio Coding), MP3, Ogg Vorbis, WAV, and WMA (Windows Media Audio), among others.

To take advantage of the Squeezebox2 Wireless' cordless capabilities, you also need a wireless router. If you already have a wireless Internet connection at home, you do not need to buy any additional routers. Squeezebox2 Wireless will share your wireless network.

We thought we might need to buy audio cables to connect the Squeezebox2 to our stereo receiver, but Slim Devices included RCA cables. If we had chosen to take advantage of Squeezebox2 Wireless' SPDIF (Sony Philips Digital Interface Format) digital audio capabilities, we would have needed to buy a digital audio cable.

Finally, we needed a computer. Almost any modern computer would do because Squeezebox2 supports many OSes, including Windows NT/2000/XP, Mac OS X 10.1.5 or later, and Linux/BSD/Solaris with Perl 5.6 or later. The only situation in which you may need to buy any additional computer equipment is if your hard drive is not large enough to hold all of the music you would like. If you need more storage space, you can upgrade to a larger hard drive, install an additional drive, or connect an external FireWire or USB drive to your computer.

Music Machine

We think one of the best features of a wireless system is that we can listen to music without mucking up our décor. Nothing ruins the ambience at a social gathering like wires hanging down the walls from your stereo or people tripping over the audio components' cables. Squeezebox2 Wireless helps you avoid these situations, so all you have to worry about is which song to play first.

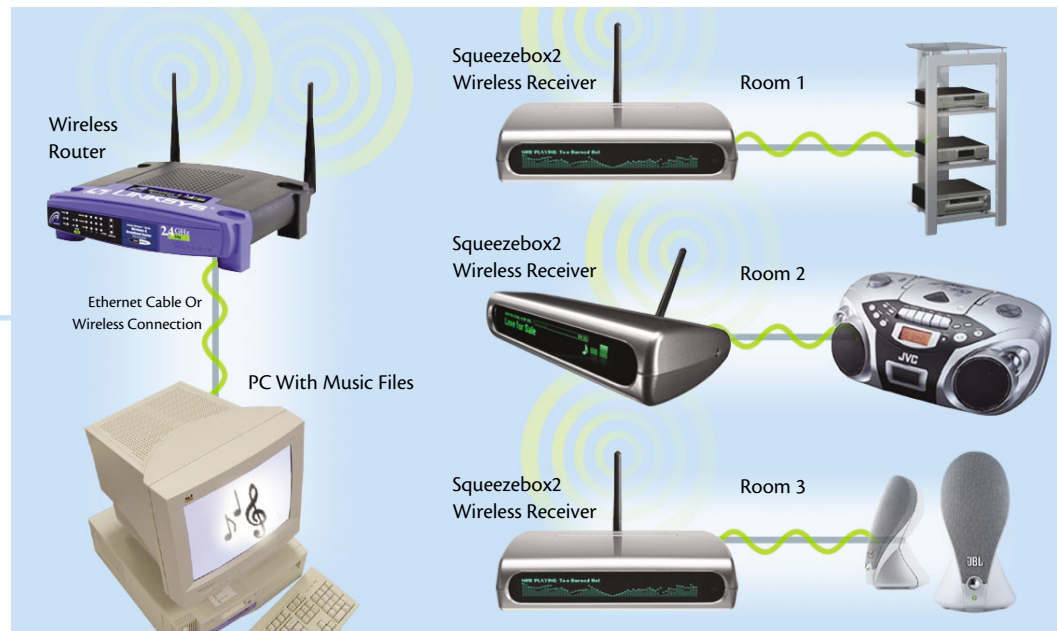
But before we can start the music, we have to download the SlimServer software and set up the Squeezebox2 unit. First, we installed the SlimServer software (www.slimdevices.com/download) on the same computer on which we stored our music files. Next, we set up the Squeezebox2 unit. The antenna was not connected yet, so we screwed it into the hole in the center of the back of the Squeezebox2. Then, we set the unit next to our stereo equipment and used the supplied RCA cables to connect the device to the back of our stereo receiver. We matched the red plugs of the cables to the red jacks on the Squeezebox2 and the receiver and matched the white plugs with the white jacks. (We could have also connected the Squeezebox2 to compatible receivers, stereos, portable speakers, or any other device that can play audio and that supports audio-in through RCA, SPDIF, or 1/8-inch jacks.) Finally, we plugged the included power supply into the designated jack on the back of the Squeezebox2.

After turning on our stereo receiver and inserting the two included AAA alkaline batteries in the Squeezebox2 remote control, we pressed the remote control's Power button. The Squeezebox2's LED screen displayed the Slim Devices logo and then the greeting, "Welcome To Squeezebox."

We followed the on-screen instructions to set up the Squeezebox2 receiver. We could navigate the menus, respond to

whole-house audio systems

The following diagram shows a typical wireless audio network setup. Using a system such as this, you can eliminate the need to run cables throughout your home.



on-screen prompts, and enter all information using the remote control's buttons. Most of the Squeezebox2 configuration is automatic. For instance, we first used the remote control to select the Set Up Networking option. Then we selected a wireless configuration. Squeezebox2 prompted us for a country code, and we selected from a list of countries on the screen.

Squeezebox2 prompted us to select the type of encryption on our network (No Password/No Encryption, 64-bit WEP [Wired Equivalent Privacy], 128-bit WEP, or WPA Personal [Wi-Fi Protected Access]). Then the screen prompted for the encryption password. We used the remote control to enter the characters in the same way that we would use a cell phone's buttons to send a text message. Squeezebox2 automatically obtained an IP address and connected to our network. Slim Devices' music player also automatically checked for firmware updates.

Once the Squeezebox2 Wireless was connected and configured, we could access our PC's music collection. We made sure the computer was on and then

used the remote control to choose Browse Music Folder on the unit's screen. Squeezebox2 accessed the files on our PC, scanned our My Music folder, and displayed all the music files we'd saved in that folder and its subfolders. By default, Slim Server searches for music in the My Music folder, but you can configure Slim Server to look elsewhere for music files. We used the remote control to browse not only by Title but also by Artist, Album, Genre, Folder, and Playlist. The remote control's Add button lets you add tracks to the current playlist. You can also listen to Internet radio on your home stereo by choosing Internet Radio from the Squeezebox2 menu.

One of this device's greatest features is the Search feature. After you press the Search button on the remote control, you can use the remote control's number pad to enter the name of a Song, Artist, or Album for which you would like to search.

Depending on the size of your house, it's possible that you may want to access your music in more than one room of your home. You can do this by connecting additional Squeezebox2 units to

the receivers or speakers in other rooms of your house. You will connect and configure each additional receiver in the same way that you did the first. We were impressed that the Squeezeboxes accessed music on the same computer and could broadcast the same song to all the units. This capability is especially helpful if you have a get-together with people scattered among many rooms of your home. We could also use the remote control to play whatever music we liked on each, regardless of which tracks the other Squeezeboxes were playing at the time, which is helpful if guests at your party prefer varying types of music.

Boost Your PC's Ego

You can control your music through more means than just the Squeezebox2 remote control. You can also use your computer to browse music and play it through your stereo speakers using the SlimServer software.

If you are using the computer on which you installed SlimServer, open your Web browser and, in the Address bar, type **http://localhost:9000**. Then press

whole-house audio systems

ENTER. You can also access SlimServer through other computers on your network. For instance, if your music and SlimServer are on your desktop computer in the basement, you can still access your music using another computer

on your network, such as your portable notebook computer. On any computer that doesn't have SlimServer, type **http://**, followed by the desktop PC's IP address, followed by **:9000**, and then press ENTER.

If you do not know the IP address, go to the computer that has SlimServer installed. If it is a Windows system, click Start and Run. Then type **cmd** in the Open field. Press ENTER. At the DOS prompt, type **ipconfig** and press ENTER. Write down the resulting number, which is the PC's IP address. If you installed SlimServer on a Mac, click System Preferences in the Dock, click Network, and select the type of network connection your Mac uses from the Show drop-down menu. Click TCP/IP and write down the resulting IP address.

Shopping Checklist


Assuming you already have a computer, a wireless network, and stereo equipment, there are few expenses involved in setting up a home audio network. As you can see below, the only major cost will be buying a music receiver for each room in which you plan to play music wirelessly.

| COMPONENTS | YOUR OPTIONS | PRICE |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MUSIC RECEIVERS | Squeezebox2 Wireless or similar device | \$299 each for the Squeezebox2 Wireless. (Buy one for each room to which you want to beam music.) |
| COMPUTER | Windows, Mac, Linux, or UNIX system (for Squeezebox2 Wireless) | None; use your existing computer. |
| HARD DRIVE | You won't need to buy a hard drive or additional hard drive space unless you run out of enough space on your computer's hard drive to hold the amount of songs you would like to store. If you need additional hard drive space, you can upgrade to a higher-capacity drive or add an external hard drive. | Add as much storage as you need to hold your music collection. 80GB internal drives start at about \$60. 160GB internal drives start at about \$85. |
| WIRELESS ROUTER | Assuming you already have a home wireless network, you will not need to buy any additional WAPs or routers. | If you do not already have a wireless router, you can buy one from a manufacturer such as D-Link, Linksys, or NETGEAR. Prices start around \$50 and vary quite a bit among models. |
| STEREO EQUIPMENT & SPEAKERS | Squeezebox2 Wireless supports receivers, amplifiers, speakers, headphones, and other equipment through an analog audio-out jack, an SPDIF audio-out jack, and a 1/8-inch headphone jack. | None; use your existing stereo equipment. |

Expand Your Media Options

We couldn't possibly cover all the features in Squeezebox2 in the space we have here. However, one noteworthy feature is that the Squeezebox2 can function as a wireless bridge. By connecting other network-ready hardware to the Squeezebox2's Ethernet port, these devices can also join your wireless network. For instance, if you want to set up a TiVo in a different room than your router, you can place a Squeezebox2 unit in that room and use an Ethernet cable to connect the TiVo and the Squeezebox2 so the TiVo can access the Internet over your home's wireless network.

Several companies other than Slim Devices make systems that can distribute your music wirelessly throughout your home. Some alternatives to Squeezebox2 include NETGEAR's Wireless Digital Music Player (\$149.99; www.netgear.com) and the Rockford Omnifi DMS1 Wi-Fi Home Digital Media Streamer (\$199; www.omnifimedia.com). Features and setup procedures vary, depending on which device you buy.

Regardless of how you choose to configure your home audio system, though, you'll find that creating a wireless music network is a great way to get all of the music with none of the cable clutter. 

BY KYLEE DICKEY

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Store The Equipment In Style



One Salamander Designs Synergy Single audio tower is composed of Synergy Single 30 shelves and sides, a shelf extension, and then a door. We liked maple with aluminum metal and perforated steel doors.

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olks with whole-house audio systems are often confronted with a strange problem, one that they might not have planned for: Where should we put the system's receiver and other audio control panels? We take such great pains to hide the speakers and wires so they won't muck up our décor; we certainly don't want the large, cumbersome, ugly devices that control it all to show, either.

At this year's CES (Consumer Electronics Show), there was a surprising amount of attractive media furniture that you can seamlessly integrate into your home's existing décor. If traditional storage solutions, such as a spare closet or proper utility room, won't work for you, we'll give you some fashionable ideas of what to do with all that plastic and steel.

We give you suggestions for three media furniture price points for an average family—high, medium, and low—so you can find something that best fits your lifestyle and budget. Of course, the type of audio system you have also factors in, so carefully consider that before you invest.

whole-house audio systems

If Price Is No Object . . .

If you're looking for a contemporary and polished look for your audio equipment and you have a hefty budget to work with, check out Salamander Designs' (www.salamanderdesigns.com) line of audio stands. We especially like how this furniture is highly customizable. For example, one Synergy Single audio tower is composed of the Synergy Single 30 shelves (\$449), the Synergy Single 30 shelf extension (\$299), and two S30 sides (\$99), and then an S30 door (\$139) is added with a perforated steel panel. (We love this feature because it provides excellent ventilation.) You can buy these pieces separately, which lets the unit expand or change with your entertainment and aesthetic needs. The shelf extension, especially, integrates the system with the rest of your décor because you can use it as a display area for your family's treasures, such as framed pictures. You also get to select the wood finish (black, cherry, maple, or walnut), the post finish (aluminum or black), and type of door pane (frosted glass or perforated steel).

We also like Sanus Systems' (www.sanus.com) Component line. The five-shelf audio cabinet (\$849.99) is made of cherry wood with black accents; it's a look that's so nice, we wondered if it really was meant for audio equipment. Sanus created the cabinet with its Convention Cooling System, which forces hot air out of special slots toward the top,

replacing it with cooler air that's drawn from vents at the bottom of the cabinet. This feature is especially nice because the only option for the door pane is glass, which doesn't provide as much ventilation as some audio systems might need.

The systems we describe above will cost upward of \$1,000, and they are on the simple end of what Salamander and Sanus offer. Indeed, style comes with a price, and although Salamander and Sanus use great-quality products and offer extreme customization, many consumers may not want to make such an investment to house equipment for their whole-house audio system. If you're in this group, you still have plenty of other options from which to choose.



We thought this Sanus audio cabinet looked so good, we didn't believe at first that it was media furniture.

In Place Of Ad Hoc Furniture

You might already have some items or areas of your home that you can use to store your whole-house audio equipment. Some of these ideas may require a little modification to allow for ventilation and wire accessibility, but here are some of our ideas that won't make your gear stick out like a sore thumb.

+ **Big-Girl Toys:** Use your childhood toy box as an easily accessible way to store and hide your audio equipment.

+ **Guest Room Retreat:** Even though spare closets are usually few and far between, spare bedrooms sometimes aren't. Put your equipment high on a bookshelf in your guest room; keep a cute (and stable) chair nearby in case you need to make adjustments.

+ **Bathroom Fun:** Yes, we did say "bathroom." Often, only one of your home's bathrooms will have cleaning supplies and hair products in the vanity cabinet. If you have a spare cabinet, put it to good use.

+ **Wicker Is In:** You can buy large wicker hampers for less than \$50. Set your audio equipment in one of them, but make sure it's wide enough so you can easily get to the front control panel. An added bonus is that most of these provide good ventilation.

whole-house audio systems

Audio Furniture Shopping Tips

1 Set your budget in advance and stick to it; like most things in life, the sky's the limit.

2 Before shopping, take careful note of the type of audio system you have. Did a contractor put wires behind your drywall? Do you have cords tacked down along your trim? Is your system wireless?

3 Carefully measure all your equipment with a measuring tape before you go shopping. Make sure you get all the dimensions: height, width, and depth.

4 Take the measurements in both inches and centimeters. You never know how your furniture company handles numbers.

5 Carefully consider your home décor, including often-overlooked areas such as trim color and flooring. Some of the new platinum audio stands are really cool and modern, but do you like that look with your cherry wood floors?

6 If you have a wired audio system, look for furniture that provides some sort of cord-management system in the back.



Bush Furniture's Sonoma provides a good alternative to higher-end audio stands.

Midrange Options

Bush Furniture (www.bushfurniture.com) was also at this year's CES. This company provides consumers with a good alternative to Salamander and Sanus that won't take such a bite out of their budget. Our favorite Bush design is its Sonoma Audio Tower (\$299), which features four shelves and a drawer and comes in the color cherry mocha. Like other audio stands we looked at, the Sonoma features a cord-management system at the back of the cabinet. The glass door, while not ideal for ventilation, is still elegant, and if your audio equipment doesn't take up all four shelves, display a few books or a picture frame instead. We also liked the touch of silver on the handle that modernizes this piece. Bush manufactures this design specifically for Best Buy (www.bestbuy.com), so head to that store or its Web site if you are interested in purchasing it.

Overall, Bush's Sonoma Audio Tower is a solid and attractive investment for folks


with a midrange budget. But if you'd still like to shave a little off your overall cost, we have more options.

Hit The Bull's-Eye

Target (www.target.com) is an icon to many American consumers who want style on a smaller budget. This reputation extends to its collection of media furniture, and many pieces are surprisingly similar to Salamander Designs'. For instance, Target's Pablo Mobile TV/Audio Cart in Espresso (\$119.99) is visually and functionally comparable to Salamander's Archetype 3.0 in walnut (\$259.95) with dual wheel casters (\$19.95), but it costs less than half the price. For a more traditional look, check out Target's Cinema Audio Pier in Caramel Birch (\$99.99), which you can easily and stylishly integrate into a family room or den.

Swedish company Ikea (www.ikea.com) is another icon that's known for its design-on-a-budget mentality. If you are going for the minimalist look, check out its Tunhem (\$125), a unit designed by Tord Björklund. It has a pine frame (though the doors and drawers are made of veneered particle board) that gives a clean and airy look. We especially like the cord-management system and the adjustable shelves inside the cabinet. You can use the lower two drawers for media or accessory storage. However, it's fairly shallow (less than 16 inches), so measure your equipment carefully before you purchase it.

Something For All Styles

Though not all of these options will work with every whole-house audio system, these ideas should give you a good start. Evaluate your and your family's needs and wants and go shopping from there. Regardless of what kind of system you have set up, you'll be able to safely and stylishly house your equipment and preserve your home's existing décor. 

BY KATIE SOMMER

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5

Tips On Setting Up & Enjoying Your Whole-House Audio System

+ Start With A Sound Design

Before you do anything, make sure you have a good plan in place. Ask yourself the following questions: Where do you spend the most time in your home? Those areas should be at the top of the list for placing audio speakers. Do you want whole-house to include outside your house, on the patio or swimming pool areas? Are you going to include bathrooms and guest rooms? If the latter, you may want to consider placing that room in a separate zone, so your visitors can control their own music. Knowing the answers to these questions may prevent you from overspending or from doing additional work later.

+ Don't Compromise On The Speakers

If we were forced to pick the most essential factor in the audio system, we would choose the speakers. And you are in the best position to decide which models you want to install, not the electrician or installer, because you're the one who will be listening to them. Head to a nearby sound store and demo the best-sounding speakers that will fit your budget. And, keep in mind, you don't need to buy the same speakers for every room; in fact, you'll probably want higher-end equipment in, say, the family room.


+ Wire Ahead

No plans for whole-home audio in the spare bedroom? You might consider wiring the room when you wire the rest of the house because it's much easier to lay the wiring all at once, especially if you're building your house. And if that's the case, it's best to lay the wiring after as much construction is complete as possible but before the air-conditioning wiring is complete. According to the folks at HomeTech Solutions, if you don't install the audio wiring first, the electrician might put the air-conditioning wires too close to the audio wires, which will cause some serious interference.

+ Consider Speaker Placement Carefully

One size doesn't fit all, and the perfect setup in one room may be way off the mark in another. For example, in a room where you plan to listen to a lot of music, placing speakers equally around the room can create ideal conditions for what is known as a "sweet spot." In an area such as a hallway, for example, you might want to place a single speaker or a line of two or three speakers. In an area where the audio will act primarily as background sound, such as in a dining room, consider putting the speakers at a low height (knee-level) so the audio doesn't interfere with conversations.

+ Go By The Numbers

If you're installing your own system, carefully plot your wiring and number everything on paper first. Include not only the zones, if you're installing multiple zones, but also the audio sources and other equipment. Plotting your setup on paper before you start will help prevent connecting anything incorrectly, and you'll achieve a sense of satisfaction as you cross each item off your list! 

BY HEIDI ANDERSON



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Shed Some Light On Digital Video

Because Video
Should Be Seen
As Well As Heard

W

hen you're shooting video, a lot of factors go into making sure you end up with something that isn't a chore to watch: a well-framed shot, a steady hand, a focused picture. At the top of the list, though, is good lighting. If you can't see the video you've shot, then you might as well not have shot it at all.

Video lighting poses unique challenges. Video captures an ongoing moment, often with changing conditions, and this may mean movement—of both you and your subject. If you're shooting digital video of active children, for example, you may start out somewhere with perfect lighting, but chances are the kids will soon end up somewhere else. Even a change of angle or a simple pan across the room can radically change the lighting conditions.

Digital camcorders automatically adapt to lighting shifts and often give you the means to handle some of them yourself. Even budget units are stuffed to the gills with features these days. Below are some of the most common lighting-related features to look into when shopping for a camera or make sure you're familiar with if you already have one.

Automatic Exposure

Because camcorders can encounter so many lighting variables, manufacturers try to make it easy on us by having the unit automatically react to conditions by setting **shutter speed** (how rapidly the camera shoots digital frames) and **aperture size** (a mechanism similar to the iris of your eye that controls how much light passes through the lens). A sensor continuously measures the strength of the light coming through the lens and, to maintain what the camera considers an optimal exposure, adjusts the shutter and aperture accordingly. Camcorders usually have some sort of Auto or Easy setting to simplify operations so that once you begin recording, you're free to concentrate solely on capturing the moment.

You can often, however, tailor camera automation to specific environments or situations. Most camcorders, like still cameras, offer a variety of programmed shooting modes, some of which influence the camera's response to light. These modes may go by different names



You can use the front-mounted lamp on Canon's Elura 90 in Super Night Mode or Night Plus Mode.

Sony's DCR-HC90 is one of many models featuring their excellent NightShot infrared system.

JVC's GR-D93US provides instant access to solid backlight compensation.

in different cameras, but you'll usually find some form of these three:

Spotlight. Good for shooting solo performers in school pageants and other stage shows, this mode calculates exposure solely from the light concentrated in the center of the frame.

Low light. The camera is primed to make the most of available light under dim conditions.

Beach/snow. Sand and snow create highly reflective environments that can trick the camera's sensors into thinking more light is present than is actually

there. This mode prevents the camera from underexposing the scene, making it too dark.

Your camcorder will likely give you quick access to these and other modes through its on-screen menu system.

Backlighting Compensation

Backlighting occurs when your subject is in front of the sun, a window in a dim room, or some other powerful light source. As the camera's sensor reacts to the strength of the background light, it underexposes the foreground and turns your subject into a darkened silhouette.

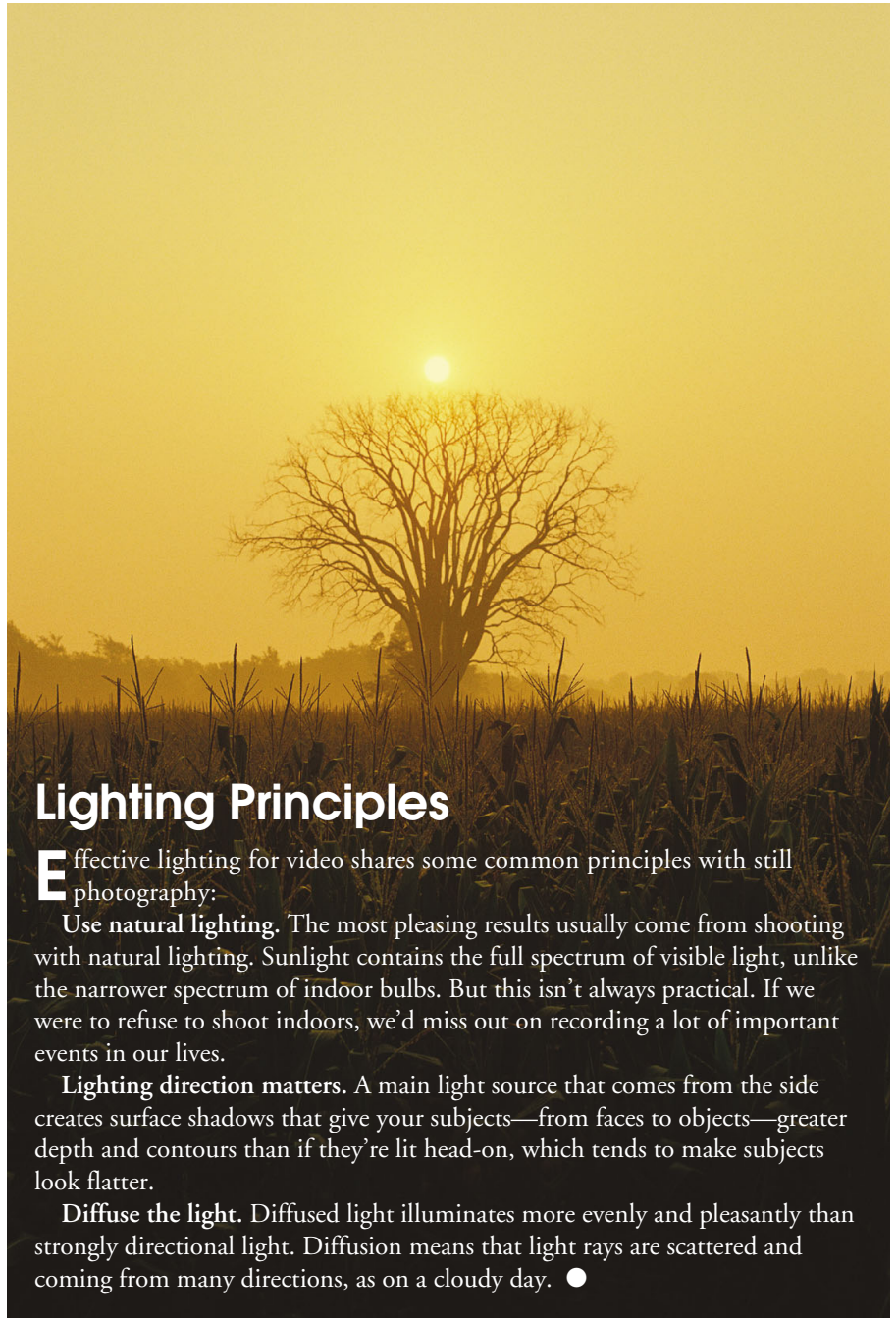
It's best to avoid these situations, but when you can't, a compensation feature can help restore visibility. The camera may widen the aperture to admit more light and reveal the obscured detail, or it may process the shot internally to artificially brighten the picture.

In some cameras, backlighting compensation occurs automatically (although you may have to activate it in the menu settings, which will instruct the camera to be alert for backlighting conditions). Other cameras, such as JVC's GR-D93US (\$699.99; www.jvc.com), furnish a manual control. This is often seen as a dedicated Backlight button on the control panel that's exposed when the display screen is open.

Built-In Lighting

When you're confronted with low-light situations, some camcorders have an onboard lamp that you can activate to illuminate close-up subjects. For instance, some models in Canon's extensive camcorder line, such as the Elura 90 (\$699; www.canonusa.com), feature a front-mounted lamp that you can use in one of two modes: Super Night Mode triggers the light when it is needed, and in Night Plus Mode, the light shines continuously. JVC has several models, including the GR-D295US (\$499.95), with Auto Illumi-Light, a built-in light that automatically turns on in low-light situations.

Onboard lights have their limitations, though. Their effective range can be short—a few feet at most—and prolonged operation will often drain the battery pack faster than if shooting without the light. Also, because the camcorder may compensate for low light by shooting with a slow shutter speed, the resulting video can look stut-tery, as if the footage seems to hang on one frame and then leap ahead to another frame.



Lighting Principles

Effective lighting for video shares some common principles with still photography:

Use natural lighting. The most pleasing results usually come from shooting with natural lighting. Sunlight contains the full spectrum of visible light, unlike the narrower spectrum of indoor bulbs. But this isn't always practical. If we were to refuse to shoot indoors, we'd miss out on recording a lot of important events in our lives.

Lighting direction matters. A main light source that comes from the side creates surface shadows that give your subjects—from faces to objects—greater depth and contours than if they're lit head-on, which tends to make subjects look flatter.

Diffuse the light. Diffused light illuminates more evenly and pleasantly than strongly directional light. Diffusion means that light rays are scattered and coming from many directions, as on a cloudy day. ●

Night Vision

It's sometimes difficult to separate built-in lighting from the various night modes developed by manufacturers, almost all of which use proprietary names to describe their technologies.

In addition to the built-in lamp on some units, Canon also has a basic Night

Mode that doesn't use the lamp. Instead, it slows the shutter speed and increases the sensitivity of the image sensor. JVC's Night Alive mode and Panasonic's Magic Pix option use a similar strategy.

In practice, this type of camera operation isn't often very useful. The slow shutter speed (as low as a half second)

Get Attached To Video Lighting

The day may come when you conclude that your camcorder's onboard lighting isn't doing the job you want because things could be lit better. Here are a few possible scenarios:

- Maybe you shoot a lot of video in your home, and the inconsistency between locations is starting to get jarring—the kids look orange in one room while your spouse looks yellow in another.
- Perhaps you're an outdoor enthusiast shooting in a high-contrast area such as a forest or a beach. In these types of places, you'll often encounter extremes of lighting close together, with patches of bright sun next to deep shade. Extra light can help fill in the shadowy areas without overexposing the rest.
- On a professional basis, you may need to shoot some office footage, but typical office lighting—overhead fluorescent tubes—can be terribly unflattering. It may give skin a greenish cast and create shadows from above that can leave faces looking like something from a cheesy zombie film.

When your expectations reach the point that your camcorder alone seems inadequate, it may be time to add a more powerful light attachment. Attachments fit into a bracket atop the camera called a **shoe**. Some shoes merely hold the attachment. Others, called a **hot shoe**, have electrical contacts that supply power.

It's a good idea to first check to see if your camcorder's manufacturer offers an accessory light for your model. For example, Sony's HVL-S3D 3-Watt Video Light (\$39.99; www.sonystyle.com) is compatible with dozens of models, locks on to your camera in seconds, and has a 10-foot effective range. It's quite power efficient, but it draws power from the camcorder battery, so if you add this type of light, you may want to also invest in a larger capacity battery to increase your shooting time.

Plenty of third-party lights are also available, such as Smith-Victor's Q250-SG Video Light (\$75.95; www.smithvictor.com). At 250 watts, this one is considerably more powerful than many. It easily attaches to your camera shoe with a 7-inch angle-adjustable arm. It runs off wall current and has a 10-foot cord, so even with a long extension cable, your mobility will be somewhat limited.

If independent power and portability are both concerns, you may need something like Bescor's KLK624D lighting kit (\$108; www.bescor.com), which includes its own battery pack (in a pouch that can hang from your belt with its military-style clip), charger, and diffusion filter. This model comes with two 20W bulbs, but you can also use different combinations of 10 and 20W bulbs (for 20, 30, and 40W operation) that let you decide which balance you want to strike between power and battery life.

Other manufacturers of consumer-grade light attachments include NRG Research (www.nrgresearch.com) and Frezzi Energy Systems (www.frezzi.com). ●




can result in video with motion that looks smeared, blurry, or choppy—sort of like a flipbook. This means you may only get satisfactory results from shooting unmoving subjects while using a tripod.

Other camcorders take a different approach by emitting a beam of IR (infrared) light to penetrate the gloom. Not only can you shoot in low-light situations, but you can also shoot in a pitch-black environment (without being seen, if that's important, because infrared light is invisible to the naked eye). However, the trade-off is accurate color reproduction.

Samsung's version of infrared, called Power Nite Pix, has the eerie green tone and grainy look that you'll probably recognize from wartime news coverage.

For our money, though, Sony's implementation of infrared, NightShot, is the best night mode out there. It's available on most of the models in Sony's extensive MiniDV and DVD Handycam lines, including Sony's DCR-HC90 (\$999.99; www.sonystyle.com). In darkness, it has a monochromatic look similar to black-and-white. This feature does an impressive job of capturing subjects up to 20 feet away while keeping the video smooth and watchable. You can also use it in low-light situations and still retain some color.

Go Lightly

Camcorder lighting features are varied enough that they merit a thorough look before you buy and thorough study once you own the model. And remember: What determines a feature's usefulness isn't whether it's included, but how handy it is to use and if it delivers the results you expect. 

BY BRIAN HODGE

Know How

One Problem, Three Solutions

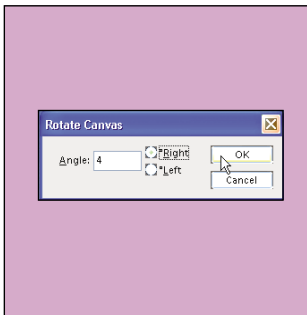
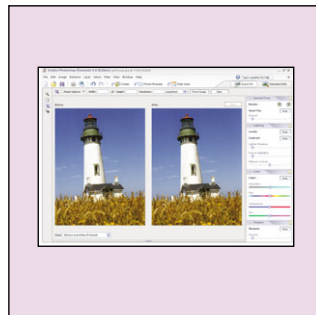
BY BRIAN HODGE

Because digital cameras let you see your photos immediately, they're great for letting you know when you need to retake a shot. But sometimes the glitches aren't so obvious, and the more subtle they are, the more likely you are to miss them until it's too late to retake the picture.

Crooked shots often fall into this category. You may be concentrating so much on the subject that you don't realize you've tilted the camera a bit; this mistake only becomes apparent later. Fortunately, our three featured photo editors let you straighten out an image almost as easily as you can adjust a picture hanging crooked on the wall.

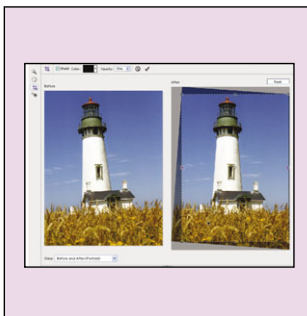
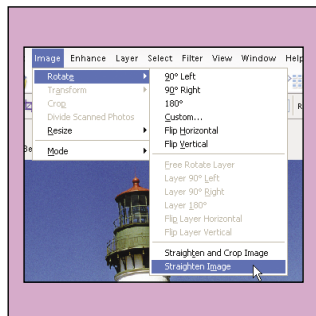
Adobe Photoshop Elements 3.0

Open your photo in the workspace. The straightening option is available in the Quick Fix and Standard Edit views. We used the Quick Fix interface, which, unlike Standard Edit, let us compare side-by-side before-and-after views.



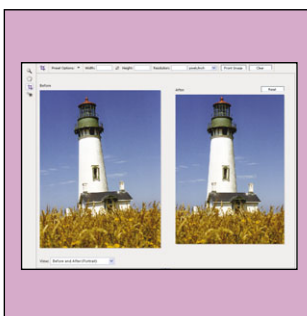
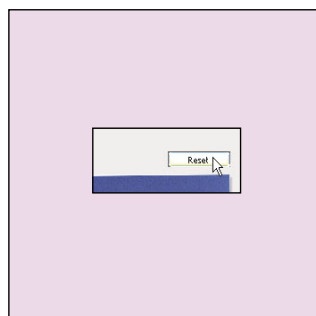
In the dialog box, click the radio button to rotate Right or Left, type the number of degrees you want to shift the picture, and click OK. We know the lighthouse is four degrees off, but you may have to guess. Keep clicking Reset until you've found the right amount of rotation.

Adobe PSE has an automated straighten function. From the Image menu, click Rotate and Straighten Image. The program analyzes the photo and rotates it accordingly, but it doesn't always work. With our lighthouse it tipped the photo further in the wrong direction.



With the photo rotated, trim away the crooked edges. Select the Crop Tool from the Toolbar, define your selection area, and press ENTER. (For more on cropping, see "Zoom & Crop" in our May issue.)

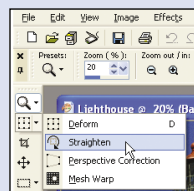
All is not lost, however! If the automatic Straighten Image doesn't do the trick, click the Reset button to start over. Return to the Image menu, choose Rotate, and select Custom.



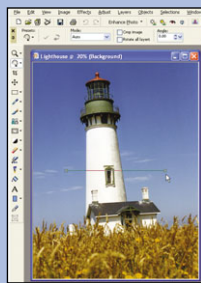
And that's it—you're done!

Jasc Paint Shop Pro 9

Choose the Straighten Tool from the Toolbar's second tool group under the Pan/Zoom button.



PSP 9 places a straightening bar on the image. This bar has square handles at both ends.



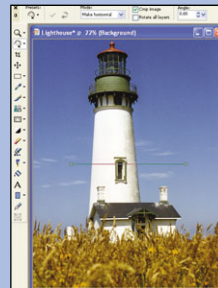
Click and hold the handles and drag the bar so it aligns with a feature in the photo. Here we're aligning it with the lighthouse cabin's roof.



Select the alternatives from the Tool Options palette: From the Mode drop-down menu, use the default Auto mode or specify whether you want to make the straightening bar horizontal or vertical. Click Crop Image so the program automatically trims the edges.



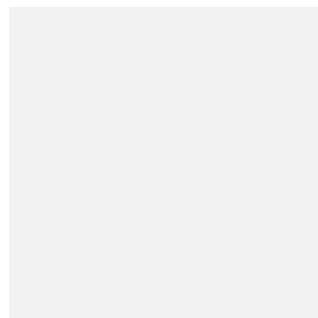
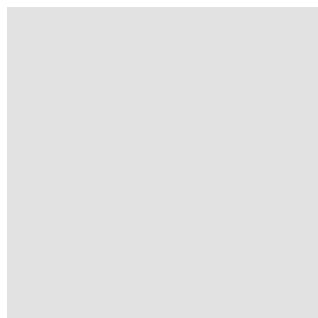
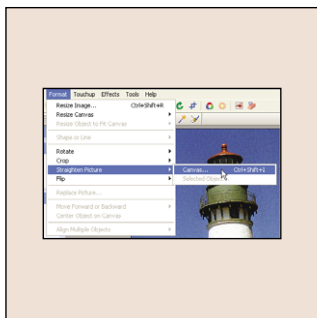
Done! When positioned at an angle, the straightening bar seems jagged. This makes it difficult to align it perfectly, especially with a small feature. If you encounter this problem, use the Zoom Tool to enlarge the feature to a workable size and proceed with the Straighten Tool.



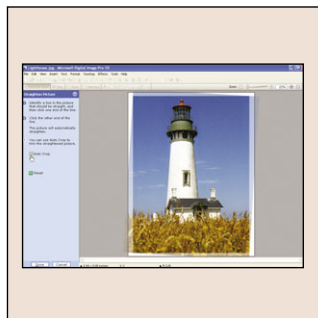
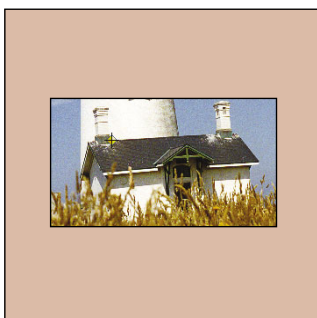
Microsoft Digital Image Pro 10

1

From the Format menu, click Straighten Picture and select Canvas from the submenu.



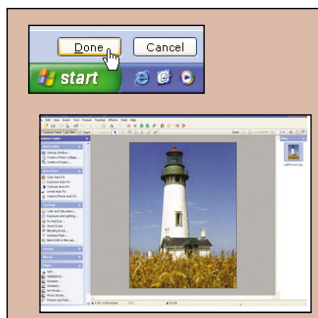
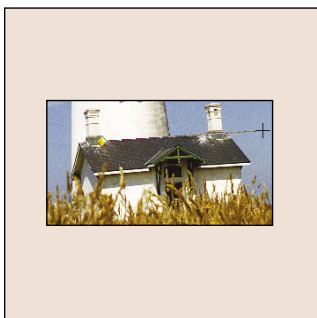
As with PSP you'll use a feature in the photo as a reference point. The main difference is that you create your own straightening bar—or line, as it's called here—rather than move one that's provided. Click one end of your reference point to anchor a gold diamond on the spot.



By default the Auto Crop option is active. After the program straightens your picture, the areas along the edge that will be trimmed away will turn translucent.

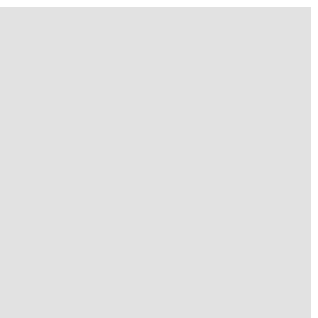
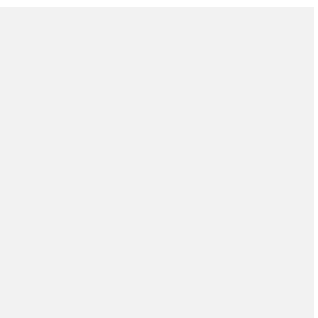
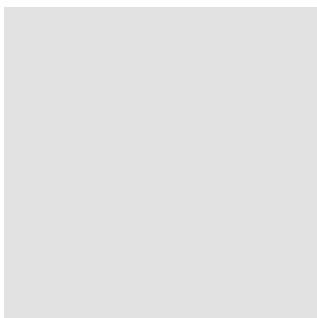
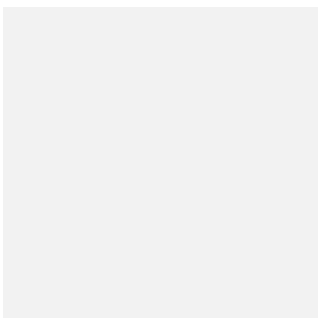
2

Drag your mouse to extend the line to the other end of your reference point and click. Again, as with PSP, you can use a horizontal or a vertical line as your axis.



5

Click the Done button and DIP will complete the cropping function.



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Living Large With Recharge

Consider Rechargeable Batteries For Your Digital Devices

Batteries. The life's blood of our consumer electronic devices. They're cheap, efficient, and longer lasting than ever. But no

matter how much capacity your copper-topped or bunny-sponsored AA has, some of today's more voracious devices drain the life out of them as fast as their replacements drain the money from your wallet.

The last thing you want on your family vacation is to miss a priceless seaside shot because your digicam's batteries are depleted. And what good are nifty features, such as oversized LCDs or extra bright flashes, if you have to turn them off or tone them down to save on battery life?

Enter rechargeable batteries. They've been around for a while, but they've recently made a comeback in the standard formats. It's much more manageable on the pocketbook if you can swap out batteries and pop them in the charger for another use rather than toss them aside. Many times, these batteries will perform better than primary (disposable alkaline) batteries with devices that require a lot of power. And they're better for the environment, as well, because you can recycle rechargeable batteries after their last gasp.

We'll look at the different rechargeable batteries, talk about which ones work best with specific devices, and we'll look at which devices are better with primary batteries. We'll talk about safety issues and how to make sure you're getting the most out of your rechargeable batteries.

Cost Savings

"Rechargeable batteries for consumer devices in general exhibit a higher cost per cell than primary or disposable batteries," says Sara Bradford, industry manager at the Power Supplies And Batteries Group at the research firm Frost & Sullivan. "For example, a cell of nickel cadmium [Ni-Cd] costs about \$1.46. A cell of nickel-metal hydride [NiMH] costs about \$1.67. In comparison, lithium ion [Li-Ion] costs about \$3 to \$4 per cell, and lithium-ion polymer [Li-Ion poly] costs \$5 to \$6 per cell. For further comparison, the cost of disposable alkaline batteries is approximately 25 cents per cell."

Costs for Ni-Cd and NiMH should continue to drop due to competition between each other and with lithium-based batteries. Costs for lithium-based batteries will decline more slowly than nickel-based rechargeables, Bradford says.

The cost difference between the cells of primary and rechargeable batteries ranges from six to 24 times as much. Why go with a rechargeable? The obvious answer is repeated use. You can charge and reuse rechargeable batteries hundreds of times, which saves money and the environment. Primary batteries still have a bit of an advantage in terms of power and capacity, but the gap is closing.

You can bring rechargeable batteries back to life hundreds of times, so you'll see a great return on your investment over time. Let's say you go through a pair of AA batteries a week in your digital camera; you can buy two AAs for \$1, so you'll spend \$4 a month or \$50 a year on alkalines. Four rechargeable AAs and

a charger sell for \$25 to \$40, so you'll save money before the year is out. And that info applies to a conservative user; heavy users will save money faster.

Most of the big battery companies (and a lot of the smaller ones) have chargers out on the market. Here are some options.

Rayovac I-C3 15-Minute Rechargeable System

\$24.99 (two); \$34.99 (four)
www.rayovac.com

Rayovac's I-C3 is designed for its I-C3 NiMH batteries, both AA and AAA. The charger recharges these batteries in 15 minutes and is available in two sizes—one for two batteries and the other for four. It'll recharge non-I-C3 NiMH and Ni-Cd batteries overnight, and the unit has a separate AC power supply. It's a great option if you need fast recharges. Picking up additional I-C3 batteries doesn't cost any more than other NiMH batteries (\$11 for a four pack of I-C3s).

Maha/Powerex MH-C204W One Hour Worldwide Travel Conditioning Charger

\$29.95
\$13 for four-pack NiMH AAs
www.mahaenergy.com

Maha's MH-C204W charges two AA or AAA NiMH batteries in about an hour or four in about two hours, but its biggest selling point is the integrated 100-240V 50/60Hz power supply that lets you recharge anywhere around the globe. There's also a "conditioning" feature that can sometimes revive dead batteries. There's an external power cord, but the power supply is housed internally. It's an excellent option if you need to rejoice your rechargeables anywhere on the planet. Ironically, the batteries are not included, and it'll cost you \$13 for a four-pack of NiMH AAs from Maha.

Kodak Rapid Charger With AA Batteries

\$24.95
www.kodak.com

Kodak has a AA version of its EasyShare Rapid Charger that recharges four AA or AAA NiMH or Ni-Cd batteries at a time in three hours. The charger's flip-down feature lets you charge a combination of both AA and AAA batteries at the same time, making it a great option for users of both. There's a folding, integrated plug for more compact storage, and it comes with four AA rechargeable batteries.

Energizer AA/AAA Battery Charger With 4 AA Rechargeable Batteries

\$26.99
www.energizer.com

Energizer's own battery charger has an auto adapter (as well as an AC adapter), so you can recharge your batteries on the way. Its four included AA batteries charge in about two to three hours. There's a built-in safety timer and an indicator light to let you know when your batteries are charged.

Nickel vs. Lithium

The two metals most used for rechargeable batteries are nickel (Ni-Cd, NiMH) and lithium (Li-Ion, Li-Ion poly). So what's different about them, and why would you choose one over another for your digital camera or other device? Or do you even have a choice?

Nickel-based batteries were the first rechargeables on the market, and you can use them in a variety of devices from power tools, such as screwdrivers and drills, to consumer electronics, such as mobile phones and digital cameras.

There are situations where one nickel battery is better than another. "Currently,

Top Five

Reasons We Love Rechargeable Batteries

1 **They're reusable.** We'll have to go with the obvious here. It pains us to throw away regular alkaline batteries. And having to buy their replacements is even more gut wrenching. It's good to know that the money spent on rechargeable AAs is worth it.

2 **No worries.** With many devices batteries drain even when the device is turned off. With alkaline batteries you not only have to replace them, but you also feel like you wasted the money on the first set of batteries. You don't have to be stingy with extra draining features, such as an LCD or a backlight, because you know you can rejoice your batteries.

3 **Green peace of mind.** You can take rechargeable batteries to your local recycling facility so there's less environmental impact than with alkaline batteries.

4 **More power.** Rechargeable batteries can often give you better performance than alkaline batteries with high-drain devices such as digital cameras. It's good to know that you're not sacrificing performance by going with reusable.

5 **Cool branding.** Rechargeable batteries just look a lot cooler than alkalines. They've got better names ("Check out my new I-C3s!"), better packaging, and just more sex appeal than a pink bunny or a copper-top.

power tools use Ni-Cd because it's cost effective, robust for hard use, and handles extreme temperatures well. NiMH came along and is really great for high-drain applications that need a lighter battery, including digital cameras, laptop computers, cell phones, etc." says Mary Koral, marketing communications administrator at Sanyo Energy (USA).

Lithium batteries are popular in consumer electronics. You'll find them in laptops, cell phones, and a range of PDAs, digital cameras, and camcorders. Li-Ion has started to take over inside laptops and high-end digital cameras because of its lightweight nature.

There are devices that can use either NiMH or Li-Ion as a rechargeable power source, but you won't usually get a choice. For most CE devices that can use rechargeable AAs, you'll use NiMH.

Safety Concerns

Because the definition of a battery is connected cells that convert chemical energy into electronic energy, there is a slight but inherent danger of chemical spills or excess energy causing the battery to burst. We asked our expert whether one type of battery might be safer than another.

"In terms of safety, nickel-based rechargeable batteries are intrinsically safer due to their rugged design that's able to withstand varying temperatures and abuse," says Bradford. Rechargeable lithium batteries are more sensitive to dramatic temperature changes or overcharging, which can lead to battery failure or in extreme cases, explosion or meltdown, she says.

With so many batteries floating around, it can be difficult to select the right type for your device. Deciding to upgrade to rechargeables may not make sense for all of your digital accessories. You'll have to decide which batteries work best, depending on the power requirements and

how you use the device, as well as what sort of investment your budget permits. Here are some general guidelines.

"NiMH is the consumer battery of choice for high-drain electronic devices such as digital cameras and MP3 players," says Koral. "For most devices, consumers don't need to worry about battery 'specs.' "

Some devices don't give you an option. "Camcorders require specialty packs where the consumer won't have a choice of chemistry," says Koral.

"And laptops today use almost exclusively Li-Ion, although some OEMs [original equipment manufacturers] offer a secondary battery pack, where NiMH may see a comeback," says Bradford.

You'll likely use NiMH for most of your rechargeable devices. But you have options about what type of NiMH batteries to buy and the charger to pair with them. If you need batteries recharged fast, consider a 15-minute charger. On average the batteries don't cost much more than typical batteries. You may not get as many recharge cycles because of the faster charge times, but they're more cost effective than alkaline batteries.

Also consider what types of batteries your devices use. If you're all AA, all the time, you're fine with a charger that handles only AA batteries. But if you use AAA batteries in your MP3 player, it's good to get a combo charger.

If you're an international traveler, you might want a charger with a built-in converter that can handle the different voltages you'll run into.

Upcoming Technology

Lithium-ion polymer is one of the newest rechargeable batteries on the market, and there are others that may be waiting ahead, including fuel cells and zinc air, offering longer battery life

and better performance for ever more demanding digital devices.

Li-Ion poly uses a flat, flexible pouch design making it more lightweight compared to Li-Ion batteries in their traditional cylindrical shape. Li-Ion poly is most often used in cell phones, but you may end up seeing it in other consumer devices in the future.

But it looks as though these future technologies will remain on the horizon for the next few years. "In terms of traditional battery chemistries, Li-Ion is the most widely used in today's market," says Bradford. This is not expected to change in the next few years, but other alternatives are starting to make an impression on the market.


More Life From Rechargeables

If you go with rechargeable batteries, treat them well so they deliver the most power possible.

Nearly empty your batteries and charge according to the manufacturer's instructions. This used to be a requirement for Ni-Cd batteries that "learned" they were empty when there was still charge in them, shortening their life (known as **memory effect**). It's not much of an issue with NiMH, but it's not a bad idea.

It may take several charge cycles for new batteries to hit their stride. If they seem to run out of life too quickly, keep recharging them, and they'll get on track.

Be careful how and where you store batteries. Keep them at room temperature—60 to 80 degrees—and store them away from furnaces, ovens, and other heat-emitting devices. Carry batteries so they're not rubbing against each other or against keys or metals that will cause them to short circuit.

When you use rechargeable batteries instead of the disposable kind, you'll pay more up front for the batteries and charger; however, if you've spent years throwing away spent batteries, you'll quickly see a cost savings as you don't have to put batteries on your grocery list each week. 

BY JOEL STRAUCH

The Life Of A Battery

| Battery System | Battery Voltage | Cycle Life | Operating Temperature | Electrolyte | Self-Discharge Rate | Memory Effect | Average Cost Per Cell | In Commercial Use Since |
|----------------|-----------------|------------|-----------------------|------------------------|-----------------------|---------------|-----------------------|-------------------------|
| | V (Nominal) | Cycles | Fahrenheit | | Per Month (Room Temp) | | (U.S. \$) | |
| Lead Acid | 2 | 200-500 | -4 to 140 | Liquid (Aqueous) | 5% | No | \$8.33 | 1970 |
| Ni-Cd | 1.2 | 1,500 | -4 to 140 | Liquid (Aqueous) | 20% | Yes | \$0.83 | 1950 |
| NiMH | 1.2 | 500-1,000 | -4 to 140 | Liquid (Aqueous) | 30% | No | \$1.50 | 1990 |
| Li-Ion | 3.6 | 500-1,000 | -4 to 140 | Liquid (Organic) | 10% | No | \$4.00 | 1991 |
| Li-Ion Polymer | 2.7 | 100-200 | -4 to 140 | Solid-Liquid (Organic) | 5% | No | \$8.00 | 1999 |
| Alkaline | 1.5 - 1.8 | N/A | -4 to 129 | Solid | 30% | N/A | \$0.25 | 1960 |

Courtesy of Frost & Sullivan, Power Supplies & Batteries Group

tips

For Cell Phone Camera Pictures

1

Get The Most From Your Phone

Although camera phone technology is making vast improvements, camera phones aren't digital cameras when it comes to image quality. However, there are ways to get the most from your camera phone. Make sure your camera is set at its highest possible resolution. The more pixels you can devote to produce an image, the sharper that image will be. Because you're devoting more pixels to every picture, they'll take up more space on your phone. Also, because of the larger file sizes, it'll take a little longer to send your pictures to others.

2

Practice Makes Perfect

The worst thing you can do is to pull your camera phone out of its box and expect to be magically transformed into Ansel Adams. The only way you're going to know if you're too close or too far away from the image you're shooting is if you've learned the peculiarities of your camera phone. Likewise, the only way you'll know if an object is properly lit is if you've garnered enough experience working with lighting and your phone. If you approach each photo you take as an opportunity to learn, you'll enjoy your experience more, and the quality of your photographs will increase greatly.

3

Move A Little Closer

Even at the highest resolution, your image won't be that big, so don't be afraid to get close to the object you're shooting. (Don't get too close, however, or you'll distort your image.) One of the biggest disappointments that novice camera-phone photographers experience is shooting a picture of something that's too far away only to have it turn into an unrecognizable speck when viewing the image. Don't try to remedy this by using the digital-zoom feature. Unfortunately, digital zooms simply magnify the pixels; they don't make them clearer. The result is still an indistinct figure, but now it's an indistinct figure that's 1.5 or 2 times bigger.

4

Free Storage Space

Because you now have a camera with you practically wherever you go, you may fill your camera phone's memory at a blistering pace. There are ways to back up your photos and free up some space on your camera for new pictures. Most camera phones let you send your photos to your email. From there you can download the photos to a computer. You can also use an online storage facility. For instance, T-Mobile offers the My Album service (www.t-mobile.com/services/picturemessaging/myalbum.asp), which lets you send your photos to a certain Web address where they'll be stored on T-Mobile's servers. This program not only stores your photos but also lets you edit them.

5

It's About Light

As with film and digital cameras, lighting is crucial to the quality of your picture. As a rule, the more light on your subject, the clearer it will appear. This may mean turning on a few more lights if you're indoors, or heading outside if it's sunny. Also, you'll notice that different lights affect your camera differently. If your camera has a white balance, familiarize yourself with it. Many lights including fluorescent and incandescent give photographs a blue or gold hue. The white-balance feature removes this hue if you use it effectively.



BY SAM EVANS

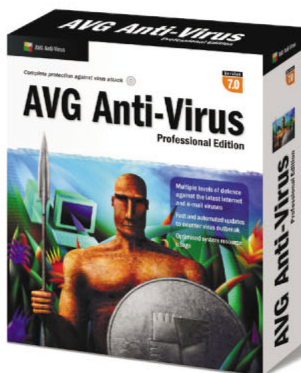
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Dirt, Grime & Your Portable DVD Player



One way electronic gadgets catch your eye is to feature sleek, shiny, metallic, or colored plastic cases—styles that, to judge by their ubiquity, we prize these days.

Although attractive, the finishes are not necessarily the best for using the product. On the one hand, ergonomics experts continue to search for the best materials for handling products and the best control elements (buttons, dials, wheels, switches) for efficient and enjoyable use. Portable audio players, such as the Apple iPod, the Rio Carbon, and Creative's Zen Micro, demonstrate this usability focus. On the other hand, the need for shiny sleekness outweighs the more practical consideration of how the product collects dust, dirt, and fingerprints.

We hold portable devices in our hands and manipulate them with our fingers. Our hands and fingers produce oil and hold dirt, which we transfer to the surfaces we touch. Cloth and wood can absorb oils; metals and plastics cannot. And that's saying nothing of the environment in which we use these devices. Dust is a fact of life in our homes, offices, and cars, and cities have their own special blend of dirt and grit. Electronics devices work best when they're clean and free of dust and grime, so it's a wonder our portable gadgets work at all.

We're going to focus on DVD players, but other portable electronics products attract dirt and fingerprints. The screen and metallic silver case of the Nintendo DS game console have reputations as fingerprint magnets. And Sony's new PSP game player is proving impossible to play without leaving fingerprints on the casing—not a problem for game play but unappealing. The case and buttons on the black edition of the Sony CLIE T665 share this problem, but only the buttons on the CLIE lose functionality due to a build up of dirt. The same goes for the PalmOne Zire 71 Handheld and a number of PDA or combined phone-PDA devices. Cleaning them properly keeps them working as they should.



This Samsung portable DVD player demonstrates the classic clamshell casing.

The black casing of this RCA portable DVD player readily attracts fingerprints.



Kyocera's Finecam SL400R suffers from a problem that affects most digicams with a lens that lies flush with the casing: During use, it's difficult to keep your fingers away from the lens, and fingerprints smudge your pictures. In fact, fingerprints smudge the LCD on numerous digital cameras because the LCDs are on the back of the devices, where your thumbs typically rest.

The Apple iPod's aluminum surface attracts fingerprints, and users have noted that black molded-plastic casings tend to show fingerprints and collect dirt. The fingerprints don't affect functionality, but dirt getting into the controls and into the headphone and connectivity jacks (USB, etc.) most certainly can.

Fingerprint Free

With portable DVD players, fingerprints and dirt create problems. You wouldn't want to watch DVDs on a dust-layered or print-smudged TV screen, and you don't want to watch movies on your portable DVD player's LCD that's all

mucked with oily fingerprints. Keeping a portable player dirt-free is important because the screen real estate on a portable DVD player is much more precious. You can put up with a few spotty areas on a 43- or 51-inch TV, but those smudges are much more noticeable on a smaller screen. And a portable DVD player is frequently competing with other viewing challenges, such as the light streaming in through the car's back window.

The screen isn't the only element to keep dirt free. You need to keep all moveable parts clean so they'll function properly. Fingerprints and other gunk on the case are annoying, but they don't prevent the player from playing. To do that, the dirt needs to find a way inside.

The RCA DRC618N portable DVD player, for example, was noted in early reviews as particularly susceptible to fingerprints. Grimy fingerprints wouldn't be an issue had the DRC618N's designers opted for a clamshell case instead of a one-piece unit. RCA's single-piece design makes the unit less bulky, but there's less case to

hold onto while watching it, and the screen is never hidden.

Some products, such as the Audiovox VBP700, have a plastic sleeve that lets you press buttons while protecting the unit from dirt. The sleeve doesn't cover the LCD, so try to avoid contact with the display, but the clamshell case provides protection. As with many electronic devices, the VBP700's headphone jacks are exposed and therefore attract dirt. Dirt gets inside, preventing the headphone plug from sustaining a good connection with the contacts inside the jack; the result is choppy, uneven audio or no audio at all.

Protective sleeves and carrying cases are important. When buying a portable DVD player, look for a case that mounts on a seat (slipping over the headrest or seat back), so you can watch DVDs in the car without holding the unit. If not, visit case maker Targus (www.targus.com/us), along with other companies, to find a case that allows hands-free viewing. The case also helps guard against damage caused by moving, dropping, or sitting on the device.

Using a remote control also protects your device from handling. Get accustomed to using the remote as soon as you get the player and make sure everyone using the player (including young kids, who seem to understand remotes intuitively) knows that it is the preferred method for operating it. Besides its ability to keep your skin oils off the electronics, the remote usually lets you access more features than the on-unit controls anyway.

Keep 'Em Clean

Because we know how easily a portable DVD player attracts dirt, we should know

how to clean it. First, dust the case, controls, and jacks using a dry dusting product such as the 3M Scotch-Brite High Performance Cleaning Cloth (\$4.95; www.3m.com), although for the case itself, any dry cloth (such as a soft J-Cloth) will do. After dusting, use a clean and slightly damp washcloth to wipe fingerprints and other messes from the case, but don't use a damp cloth on the LCD. Clean gunk from inside the headphone jacks with a damp cloth and specialized cleaning fluid such as Allsop's 79100 Cleaning Solution (\$4.95; www.allsop.com). In a pinch, cotton swabs work, especially if you've managed to get moisture inside the jacks, but be careful not to leave bits of cotton in the components.

Avoid using a spray cleaner such as Windex. The spray gets inside the controls, in any openings surrounding the screen, and into grooves in the case; it collects there attracting more dirt, often hindering performance (such as sound quality) and potentially damaging the interior components.

Although the number of cleaning products available for LCDs continues to grow with the DVD and laptop market, we've found three that work well. The first is the extremely useful 3M Scotch-Brite High Performance Cleaning Cloth mentioned above. This product is designed for moisture-free cleaning, and it's indispensable for cleaning LCDs, digital camera lenses, and CRTs. Designate a cloth for displays, and don't reuse them. You don't want to gather dirt from one surface and spread on your dirt-sensitive and easily damaged LCD. The second product is Monster Mobile's Monster Screen Clean Mini (\$14.95; www.monstercable.com), which is a liquid cleaner and a nonabrasive cloth. The cleaner doesn't streak, drip (unless you pour it on, of course), or stick to a surface and cause buildup. Use this for more demanding cleanings. Photodon (www.photodon.com) also has an array of cleaners and cloths.


Its laptop screen cleaning kit (\$19.85) has a liquid solution, various cloths (including pre-moistened cloths), and a set of tips and guidelines for cleaning everything from oily prints to ink off the display. No matter which cleaning solution you use, the last thing you want to do is touch the display with your hands or use an abrasive cloth. LCD displays puncture easily, and rough handling can damage the liquid crystals themselves, causing dead pixels (and thus gaps in the picture). Handle these things with extreme care.

Cleanliness Is Next To . . . Well, Nothing At All

From the case to the lens, your portable DVD player needs to be kept clean. Make no mistake: If you don't



The Monster Screen Clean Mini kit includes a nonabrasive MicroFiber cloth and two bottles of cleaning formula designed for displays.

clean it, eventually its performance will degrade and it might stop working altogether. Keep in mind that your hands and habits are the worst dirt creators out there, and you'll quickly come up with a regular maintenance program that works for you. Clean it before and after each use and check it regularly for oils, dust, and other kinds of easily acquired grime. 

BY NEIL RANDALL

Using Cleaning Supplies

The chart shows the type of cleaning solution you should consider for each major component of your portable DVD player.

A = Always use

P = Possibly use but only when extra cleaning is necessary

N = Never use because you risk damage

| Cleaning Item | | | | |
|-----------------|--------------------------|----------------------------|------------------------------|-------------------------------|
| DVD part | Damp, non-abrasive cloth | Specialized cleaning cloth | Commercial cleaning solution | Rubbing alcohol & small brush |
| LCD display | N | A | P | N |
| Exterior case | A | P | N | N |
| Jacks & ports | A | N | P | P |
| Button controls | N | N | A | P |
| Latch & hinges | A | N | N | P |

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Home Awareness Systems

Watching Your House While You're Away



S

ince the 1950s, the rise of three classes of devices has been perpetually heralded as "just around the corner," yet despite promising research, each always remains five years away by technologists' estimates. The first of the technologies, flying cars, doesn't seem particularly imminent, and even though video teleconferencing has become more widespread, videophones, the second device, will probably not replace standard household telephones anytime soon, mostly because the current ones work just fine. However, advances in wireless technology seem to have revived the third technology of the future, the automated home. We'll take a look at the new class of home monitoring and control devices and try to predict whether the age of the digital home is upon us or if we'll have to wait another five years.

The "Home Of The Future" Of The Past

The old futuristic story goes like this: You arrive home from a long day at work. As soon as you use your digital key to unlock the door, your house adjusts the lighting, heat, and window blinds to your liking and puts on your favorite CD in the kitchen. While you were at work, the house fed the cat, turned off the space heater your kids accidentally left on in the basement, and recorded motion-triggered video from security cameras around the property. Your refrigerator detected

an almost empty milk carton and added a gallon of 2% to the shopping list that it will email to you on Friday. Your house was ready to detect water or gas leaks, freezing pipes, and fire and could have called you, the fire department, or a plumber.

Home automation products have been available to consumers since the 1960s, but, for a couple of reasons, they've never caught on. First, they solve a problem that nobody really has. Most people don't need a computer to turn on their lights and TV for them. Second, the technology had been cumbersome and expensive, and configuration was a nightmare. Most people decided to stick with the same light switches and security systems that they'd had for years.

Present Day Peace Of Mind

A new breed of systems is changing the market by using low-cost technology that



D-Link's DCS-5300G is a wireless video camera with motorized pan, tilt, and zoom.

is easy to set up and does what people can't do for themselves. Rather than providing convenience, which can evaporate with programming frustrations, or security, which is best left to professional security firms and incurs an ongoing monitoring cost, the new systems focus on peace of mind. The idea is simple: People can see if they left the stove on while they're at work or tell if their basement is flooded while they're on vacation. These systems aren't designed to run your house for you, and they're not quite home security systems. Rather, they're designed to let you know when something is wrong, so you don't have to spend time worrying about the possibility.

This advance is being driven by the widespread adoption of broadband Internet access, which is always on to let your home reach you quickly, and wireless networks, which let you install systems without running cables. As a whole, these new systems let you monitor your house

remotely over the Internet and do only a few things, but do them very well. Here are several examples of what's out there.

Motorola Home Monitoring and Control System. Motorola's Home Monitoring and Control System is a USB base station that communicates with wireless sensors and lets you monitor your house with video and water, temperature, and entrance sensors. The Easy Start Kit (\$279.99; <http://broadband.motorola.com>) comes with the base station, software, and a wireless video camera. You can connect up to three wired and six wireless cameras and eight wireless sensors. Additional wireless cameras cost \$129.99; wired cameras with a 60-foot cable are \$79.99 each; and wireless sensors to monitor temperature, water, and door and window openings are \$39.99 to \$59.99 each.

The wired and wireless cameras both include microphones that provide audio with the video and motion detectors that can trigger your system to perform specific tasks. Motorola's software uses event-driven programming, letting you specify how you want it to notify you if it detects something unusual. For example,

Do You Need A Computer To Monitor Your Home?

Most home awareness devices can use your computer to connect to the Internet to help you monitor your home. But if you don't have a computer that you leave at home and turned on all the time, will you be able to use any of these systems?

| Motorola Home Monitoring & Control | D-Link DCS-5300G Wireless Security Camera | Eaton Home Heartbeat |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Motorola's system is basically a gateway that connects cameras and sensors with your computer. Without the computer, the base station can't communicate with the outside world or even store data for you to review later. | D-Link's camera includes software that lets your computer control it and record from it, but once the camera is set up on your wireless network, it can send data to the Internet by itself. | You can connect Home Heartbeat to your computer if you want, but it's not necessary. You also don't need an Internet connection; the system can call you over your home's phone line. |
| Bottom Line: You need a computer. | Bottom Line: If you have a home network but take your laptop to work, you can still check on your camera. | Bottom Line: Even if you don't have a computer or a broadband Internet connection, you can still monitor your home. |



Motorola's Easy Start Kit contains a USB wireless base station and one wireless video camera.

you might set up a system so if the basement temperature falls below 50 degrees or rises above 80 degrees, it sends a text message to your cell phone over your computer's broadband Internet connection. Or you might ask it to email you a video clip from a wireless camera if it detects motion during the day while you're usually away. The system can even take a still photo and send it to your cell phone if it detects a problem.

However, Motorola's system won't fix problems for you. It can't turn on the heater if pets are getting cold or shut off the water main if you have a leak in your basement. But it will alert you to problems so you can fix them yourself.

D-Link DCS-5300G wireless security camera. D-Link's DCS-5300G (\$549.99; www.dlink.com) is essentially a souped-up Web cam that lets you view your house on the Internet through your computer's broadband connection. However, it has additional features that make it useful for home monitoring. First, it uses an 802.11g wireless interface, meaning it communicates through your existing wireless network at home and uses high-speed networks where they're available. If your home network only uses wired connections, it can attach to those with an

Ethernet cable. Second, you can remotely control the pan, tilt, and zoom functions to direct the camera toward your interest, letting you cover a large area with one camera. Third, the camera includes motion detection and a microphone, so the camera can notify you if needed and provide sound to give you a sense of the scene.

The 5300G comes with software that lets you store video to your computer's hard drive while you're away, but its best feature is that it doesn't require the use of a computer after you set it up. Once the camera is configured on your home network, it can send email notifications of motion detection and transmit live video to the Web even if you've taken your laptop to work. This saves electricity that would have been wasted by a perpetually running computer.

Like the other devices in this category, the 5300G has substantial limitations. The camera won't tell you if there's water in the basement or if the temperature has dropped, but it can scan around a room to see if you've left the stove on or if the kids are home yet. Depending on what you're looking for, it may be all the security you need to ease your mind.

Eaton Home Heartbeat. Eaton's Home Heartbeat system (Starter Kit with Base Station, Home Key, one Open/Closed sensor; \$149; www.homeheartbeat.com) will be available this summer and is unique in that it has its own interface and control panel, so you don't have to

use a computer to manage it. Like other systems, it uses a base station to communicate with small, wireless devices around your home, but instead of connecting to a PC for configuration, Home Heartbeat features the Home Key. Designed to be carried with you, the Home Key receives wireless updates from the base station, letting you monitor sensor status from anywhere in the house. You can also plug it into the base station or any sensor and use it as a configuration screen. The base station features a USB port to connect to your computer for upgrades and Internet monitoring, but its use isn't necessary; Home Heartbeat uses its Call Me function to send email or text messages to your cell phone if it can't reach you via the Home Key.

Eaton's goal is to provide you with a device you won't have to manage because it alerts you to emergencies and reminds you of tasks. Unlike the other two systems, Home Heartbeat isn't based on

ZigBee: Secure & Wireless


Easy-to-install home monitoring devices often use wireless links to communicate with each other so you don't have to run wires around your house. Eaton's Home Heartbeat system is one of the first to use a new wireless networking standard called ZigBee. ZigBee is a relative of Wi-Fi and Bluetooth, the common wireless standards for computers, and although it isn't designed to carry as much data, it's more reliable and secure and uses less power, making it ideal for connecting the sensors that monitor your home. Eaton's base station handles all of the ZigBee communication and then can pass sensor data to your computer over a standard USB cable. Expect to see more home automation products using ZigBee in the future. ●

video cameras that you need to watch. Rather, it's based on sensors, including Water sensors to detect leaks or flooding, Open/Closed sensors to monitor if doors or windows are open, and Power sensors that determine if a device is drawing electrical power from a wall socket.

Eaton's system also features devices that aren't really sensors but can make your life easier. The Reminder/Timer sensor, for example, can help you remember to take out the trash every Tuesday night or buy milk on a certain day. The Attention sensor functions as a beeper for your house. Pressing a button will send an alert to the Home Key. It's ideal if you have a back door without a doorbell or an elderly family member who often needs assistance at home. Home Heartbeat's most unique capability is that it can respond to some problems. Eaton offers a device that you can program to shut off the main water supply to your house if it detects a major leak. Then, if your basement pipes burst while you're on vacation, the system will shut

off the water, and you won't have to wait for a plumber to respond. Soon, Eaton will introduce motion, temperature, and gas detection sensors to the system.

What Does The Future Hold?

Will the home of the future be monitored by a home awareness system? It's too early to tell. The biggest factor in the success of such devices will be whether they can be reliable and easy to use so they are a source of comfort, rather than stress, for homeowners. Manufacturers seem to be aware of this and are responding with smart, clean industrial designs, but it's still not clear if consumers will want to take the time to install a system, even though this process has become more efficient over time. After all, in the future, why would you check the Internet to see if you've left the stove on when you could simply zip home to check in your flying car? 

BY JOSEPH S. BELL



Eaton's Home Key serves as an interface to the base station and sensors and keeps you wirelessly updated on your home's status.

Available Sensors

Here's what sensor features are currently available for these three home monitoring products.

| | Motorola Home Monitoring & Control | D-Link DCS-5300G Wireless Security Camera | Eaton Home Heartbeat |
|---------------------|------------------------------------|-------------------------------------------|----------------------|
| Wired Camera | X | X | |
| Wireless Camera | X | X | |
| Motion Detection | X | X | |
| Microphone | X | X | |
| Water Detection | X | | X |
| Water Valve Shutoff | | | X |
| Temperature Sensor | X | | |
| Open/Closed Sensor | X | | X |
| Power Sensor | | | X |
| Reminder Sensor | | | X |
| Attention Sensor | | | X |

Smart Appliances

Alive Or Dead?



Household appliances are crucial in our day-to-day lives. In the not-so-distant past, models of appliances with only essential features were available. Now manufacturers are developing smart appliances that reduce the steps of your household chores or do the chores automatically—quite possibly faster or better than you.

Smart appliances are designed to make your life easier by allowing you to control them remotely via some sort of network, such as the Internet.

Unfortunately, smart appliances aren't as easy to find as traditional models. In part this is due to the somewhat rocky history of smart appliances. The technology that some of these models need, such as the Internet and wireless home networks, has been available for several years, but only recently have actual appliances been produced that integrate that technology with traditional appliance functions. LG Electronics (www.lge.com) has introduced Internet-connected appliances (not yet available in the United



The iCEBOX Kitchen Entertainment Center comes as an under-cabinet flipscreen unit, shown here, or as a countertop unit.

States), but some other manufacturers discontinued smart appliances when sales were sluggish.

History Of Smart Appliances

In August of 2000, AHAM (Association of Home Appliance Manufacturers; www.aham.org) created the Smart Appliance Task Force to formulate a standard for networked home appliances. Within 18 months, AHAM had written a draft standard for smart appliances called "Connected Home Appliances - Object Modeling" that was approved as an American National Standard in 2003.

An American National Standard is a standard designed to enhance the global competitiveness of U.S. manufacturers, as well as to improve the American quality of life. There are currently approximately 11,500 national standards that companies can voluntarily choose to follow, and they cover a range of topics from industrial chemicals and building materials to information technology and emergency management.

By 2001, appliance manufacturers were actively developing smart appliances. General Electric and Microsoft formed a joint venture called GE Smart. According to Michael Isaacs, executive vice president of marketing at GE Smart, smart could mean either "communications . . . or safety and energy savings," and this unclear idea of what "smart" meant at that time made finding a direction for this area of business difficult. In turn, GE Smart began focusing on building heavily networked homes and didn't venture into production of smart appliances.

Other initiatives also fared poorly, such as Sunbeam's Thalia Products subsidiary, which was announced and then later folded without releasing any products. While consumers are generally interested in the possibilities offered by smart appliances, the products haven't gained much momentum due to concerns about cost and integration within existing homes.

Current State Of Smart Appliances

Smart appliances are still an exception to the norm, so they aren't as widely available as more traditional models. Unfortunately, most stores only carry conventional appliances, but if smart appliances develop a proven track record and lower in price, they may become more widely available in mainstream consumer outlets such as home improvement and electronics stores.

At present, when you walk into the home appliance department at a store such as Lowe's or Sears, you'll be unlikely to see smart appliances on the sales floor. Plenty of standard appliance choices are available, but if you ask a salesperson about purchasing a smart appliance, you're likely to be met with a blank stare. When we asked at Home Depot if they had any smart refrigerators, the sales representative thought we were joking at first. When we explained that we'd seen a refrigerator before that had an LCD tablet with a TV tuner and Internet access built into the door, the clerk said that she had never seen anything like that and suggested

that we try looking on Home Depot's Web site—a less-than-helpful suggestion because we had already checked their site and couldn't find any smart appliances listed.

Besides availability, consumers have several other issues to consider when exploring the possibilities of owning a smart appliance.

Price. Smart appliances offer some cool features, but those features come at a significant cost. Although a standard side-by-side refrigerator, such as the Frigidaire FRS23W3A (www.frigidaire.com) with an ice and water dispenser in the door, can cost as little as \$779, a smart refrigerator, such as LG's Internet Refrigerator, will be significantly more expensive. Although the Internet Refrigerator is not available in the United States at this time, its price would be approximately \$8,000 when compared to

the cost of the product overseas where it is currently available. Of course, you get a number of features not available with conventional models, such as Internet connectivity so you can download recipes and food preparation tips and a touchscreen interface with a family calendar and digital photo album.



Ease of use. Because smart appliances have more features than their less-connected cousins, they can be more complicated to operate. With a traditional dishwasher or refrigerator, it is unlikely that you'll need to read the product manual because you already understand its basic operations. With a smart appliance, you may have to read a manual or go through a brief tutorial to learn how some of the more advanced features work. However, after some initial training, most features should be rather simple to use.

Smart features vs. traditional features. Some smart appliances, such as the Internet-connected refrigerator from LG Electronics, provide additional features and information that can make your life easier. By providing access to help functions, food storage and preparation tips, recipe databases on the Internet, and other options, this refrigerator can take the guesswork out of what to cook for dinner or how long it's safe to keep that leftover lasagna.

Some smart appliances can simply do things better than standard appliances. Salton's Beyond Bread Maker (\$149; www.beyondconnectedhome.com) comes with a barcode scanning wand that can automatically program the appliance to properly cook a prepackaged bread mix. It is also capable of learning new barcodes from the Beyond Information Network through a connection with the iCEBOX Kitchen Entertainment Center (the under-cabinet, flipscreen iCEBOX is \$1,999, and the countertop unit is \$1,499, which is also made by Salton; see more about the iCEBOX below).

Integration. Generally speaking, you can easily integrate smart appliances with your home, depending on a few factors. If your home is old, it might be difficult to update your appliances to newer models due to wiring considerations.

Very Smart Kitchen Accessories From MIT

Appliances may not be the only products that are smart. Researchers at MIT Media Lab's Counter Intelligence Group are working on a number of smart kitchen accessory projects. One example is the Intelligent Spoon, which contains sensors that measure food temperature, acidity, saltiness, and thickness. It is connected to a computer that processes the information and then informs the user whether ingredients need to be added in order to obtain the desired results from a recipe.

Another is the Chameleon Mug, which uses sensors to determine if the temperature of the beverage in the mug is too hot to drink safely, as well as other sensors that can warn you if you have added too much sugar or if the milk is bad. The Talking Trivet can warn you when food is extremely hot and represents a possibility of heat damage to your kitchen counter or table. It can also tell you if the dish is hot enough to start a fire if it gets too close to something flammable, such as a recipe book. The Talking Trivet judges when food should be done by sensing the oven temperature and announcing cooking time accordingly.

The Counter Intelligence Group's Minerva is a system designed to help people decide what to cook based on the ingredients on hand at the time. After you choose the recipe you'd like to use, Minerva will then display a video illustrating exactly how to prepare the dish. An oven equipped with Oversight has a camera instead of a window in the door. The picture could be transmitted over a wireless home network to a computer in another room, allowing you to check how the turkey is browning or the cake is rising without having to constantly run back and forth to the kitchen.


Keep your eye on developments of these and other interesting possibilities for the kitchen of the future. ●

Some networked appliances may need extra communication connections than your home already has, which could be somewhat difficult if the house is not already wired for Ethernet or other options. Some appliances need a direct connection to the Internet, either via a phone jack or a broadband connection. These communication needs could require you to hire a contractor to add the required extra phone jack and cable and make other wiring modifications. You would also likely have to hire another technician to install your appliance for you.

Smart appliances could also be connected to each other through a home network controller such as the iCEBOX, which communicates with other Beyond appliances using the SANI (Smart Appliance Network Interface) Wireless Network. For example, you can use the iCEBOX to program your Beyond Coffee Maker (\$99) to start brewing coffee at a different time each day.

Future Of Smart Appliances

While we may never live in a "Star Trek"-inspired world of technology, appliances are only going to get smarter. The question is if consumers will embrace them and integrate them into their homes.

Smart appliances may never replace more traditional appliances, though they may become more affordable and, therefore, more widely available over time. The bottom line is that most people don't enjoy laundry or cleaning enough to want to spend any more time than necessary on those tasks. The world will have to keep an eye on this area of the CE industry, because with smarter appliances, the future could bring more leisure time and a higher quality of life. 

BY JEN EDWARDS

Advantages

Smart appliances offer some advantages over traditional appliances. By their very nature, smart appliances are generally more efficient to use than older models because they use the most modern materials and technology. Depending on specific features, some require less user interaction to operate, freeing you from the drudgery of routine household tasks.

Another advantage is that some smart appliances can download and install new features and content (such as recipes and firmware upgrades) through the Internet. For example, the Salton iCEBOX is always connected to the Internet and checks for updates from the manufacturer at least on a daily basis.

While it is unlikely that we will ever be completely free of household tasks such as cleaning, cooking, and laundry, smart appliances can make those tasks quicker and less onerous than ever before. Less time spent on those tasks means more quality time for yourself and your family. ●

Drawbacks

While smart appliances promise a future filled with more freedom, there are some important disadvantages to consider. Smart appliances are significantly more expensive than their traditional counterparts, both in terms of initial purchase price and installation. In addition, you must add the cost of your monthly Internet service to the cost of owning a smart appliance: Even though you use your Internet connection for other things, you can't decide to cancel it without greatly affecting your appliances. Also, Internet-connected appliances need to have a wireless connection, nearby phone jacks, or extra network cable throughout the house. Wiring an older home that wasn't built with network connectivity in mind can be quite expensive.

Another drawback to smart appliances is the fact that they can be plain frustrating, at least when you are first learning how the appliance operates. Smart appliances generally require time and effort to learn all their quirks. While the average person likely never opens the manual that comes with her microwave, dishwasher, or refrigerator and can easily operate the appliance anyway, the same is not necessarily true of smart appliances. There are extra settings, controls, and maintenance requirements that you need to understand so you can get the best results from the appliance.

A more serious drawback is the potential for "crashes" or downtime. What if your Internet air conditioner someday gets a virus that sets the thermostat to 50 degrees during a scorching August day in Texas while you're on vacation for two weeks? And because smart appliances are reliant upon a network, it can be frustrating when that network goes down for some reason. We all know how annoying it is when we can't get good cell phone reception in certain parts of the city. These same limitations apply when we can't use those phones to start cooking dinner in a smart oven before leaving from work. The track record for smart appliances isn't well-established because they haven't evolved over several decades, so some of their potential problems are not yet known.

More development tests and time will help manufacturers correct, or at the very least, improve these issues. ●

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tips

The PC In Your Kitchen

1

A New Kind Of Cookbook

Toss out those old cookbooks that you haven't used in years and save yourself some counter space by using your PC to find new recipes your family is sure to enjoy. We don't recommend doing this search right before you want to make dinner because you'll find plenty of options from which to decide. A general Internet search for "recipes" will turn up millions of sites for you to sift through; Allrecipes (www.allrecipes.com) and Kraft (www.kraftfoods.com) are two especially good ones to start with. By using your PC in your kitchen and your Internet connection, you can decide on some recipes that sound good, quickly check your kitchen cupboards to see if you need ingredients, and then add the needed items to your grocery list.

2

Jam To The Jukebox

If you slave away at a hot stove making dinner for your family, the least you can do is make it more enjoyable for yourself. Pour yourself a glass of wine and throw your favorite CD in your PC while you're cooking. Or, use your computer's media player as a personalized jukebox. Listen to a playlist of your favorite downloaded MP3s or even stream music from the Internet.

3

Communicate With A Calendar

We realize it's hard enough to keep your own schedule straight, let alone all the events that are going on with your entire family. So, use the kitchen computer to create a calendar so everyone knows where their family members are. After all, isn't the kitchen one room that everyone in your family makes it into at some point during the day? Make some time each day to enter your schedule on the calendar and encourage the members of your family to do the same. This an easy way to make sure Johnny has a ride to soccer practice or tell your spouse you'll be working late, especially if your kitchen table has been serving more as a work desk than a dinner table.

4

Save Yourself A Grocery Trip

Let's face it; if you're raising a family, your kitchen cabinets probably resemble props to a Houdini magic show: Everything that was once behind them disappears without a trace. With online shopping more popular than ever, there are plenty of ways to get your shopping done. Some grocery shopping Web sites let you do nearly all of your grocery shopping online. You can pick out nonperishable food and have it shipped directly to your doorstep. These sites are handy if the thought of chasing children around the grocery store makes you lose your shopping appetite.

5

Find Some TV Time

Why stop at using your PC as a CD player? Most new computers these days also contain a DVD player for watching movies, and depending on your model, you may even be able to watch recorded television. If you have the proper equipment, it is easy to play programs recorded by your DVR on your computer. Doing this while you make dinner or clean the kitchen will make catching the news or watching the latest episode of "Sex and the City" a lot easier.



BY SAM EVANS

First Glimpse Advertising Section

This special advertising section presents the latest consumer electronics products now coming on the market. Browse through these First Glimpse pages to learn about new products before they appear on your local store shelves.

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- Smart input
- Two HD component video inputs
- Three S-Video inputs (one front, three rear)
- Four A/V inputs (one front, three rear)
- RF (radio frequency) input
- Front firing speakers
- Center channel input
- MTS (Multi-channel television sound) stereo
- BBE high-definition audio
- Advanced Hyper Surround Sound
- Switchable fixed/variable audio output
- Interactive plug-in menu
- XDS ID display
- World clock
- Multifunction timer
- Sleep timer
- Input naming
- Black level expansion
- Front panel lock
- V-Chip
- Energy Star compliant
- EL (Electro Luminescence)-based illuminated universal remote control
- Hyper-scan, high-speed channel changer

JVC
The Perfect Experience

first glimpse

Advertisement

Altec Lansing inMotion iM4
MSRP: \$99.95
www.alteclansing.com



Enhanced & Portable Sound

You've got a CD player, an MP3 player, and a portable DVD player, but until now you were the only one listening: introducing the Altec Lansing inMotion iM4 portable audio system. This tiny, portable, battery-operated stereo system lets you share the sounds at home, at the beach, or on the go wherever you are. A highly efficient Class D amplifier powers four full-range microdrivers to deliver a full spectrum of pure, distinct sound, while the revolutionary MaxxBass technology allows listeners to enjoy deep bass without lugging around a

subwoofer. Place your small, portable audio device on the rubberized base, plug in the retractable audio cable, and fire up your system. It's great sound that everyone can enjoy.

inMotion iM4 Features Include:

- **Crystal-clear sound** from four custom-designed neodymium 25mm microdrivers
- **Surprisingly deep bass:** Revolutionary MaxxBass technology creates quality bass without a subwoofer

first glimpse

Advertisement



- **Extra-long battery life:** Highly efficient Class D amplifier delivers more than 18 hours of continuous playback with four AA batteries (not included)
- **Convenient retractable signal cable:** Provides clean cable management and connects to virtually any audio device, such as MP3 players, CD players, and laptops
- **Dual inputs:** Allows you to connect two audio players at the same time (second cable not included)

- **Rubberized base:** Provides a non-slip platform for your MP3 or CD players
- **Lightweight:** Folds to close at 28 ounces and 1 x 10.25 x 5.3 inches (HxWxD)

 **ALTEC LANSING®**

first glimpse

Advertisement



BenQ Joybee 130

MSRP: \$139.00

www.benq.com

BenQ Joybee 130

Stylish & Compact

The Joybee 130 has a stylish appearance and is available in two trendy colors. Besides that, it has excellent audio quality, creating an atmosphere that makes you feel like you're in the middle of a live concert.

Expandable Memory

You can expand memory up to 2GB so you don't have to worry about not enough room for your songs.

Equipped For Learning Languages

Compare your pronunciation of a word or phrase with the original word or phrase that you want to learn. You can keep

repeating until you get the right pronunciation— a powerful tool for learning new languages.

Additional Joybee 130 Features:

- Flash drive with expandable memory
- Voice recording
- FM recording
- Seven-mode equalizer
- Supports MP3, WMA, and WAV





BenQ Joybee 102R
MSRP: \$99
www.benq.com

Classically Elegant & User-Friendly Design

The Joybee 102R's miniature form makes it the smallest Joybee portable music player, with a compact design that allows you to use a single jack to listen to MP3 files through earphones and transfer data over a USB connection. The Joybee 102R is the must-have accessory for the high-style digital life.

The Joybee 102R harks back to the royal balls once held in Europe's palaces, drawing inspiration from the elegant necklaces and nobles' pocket watches. To this aesthetic sensibility, we've applied geometric shapes from modern art. Bold design and futuristic materials are melded to create a high-tech aura and produce the exquisitely stylish Joybee 102R portable music player. The Joybee 102R's trendsetting and evocative form will convince you that it is a necklace, bracelet, or other elegantly designed personal accessory. With it, you can create a life of boundless vitality, sophisticated sensibility, and Bohemian attitude. Show your creative side with the Joybee 102R and make yourself the center of attention.

The Joybee 102R can play 10 hours of MP3/WMA/WAV files. You can connect the Joybee 102R to a computer for

recharging. The Joybee 102R uses flash memory to store your music and data, meaning that you never need worry about damage from vibrational shocks. So when your feet want to move to the beat, or you want to sing to the song that's on, there's no stopping you.

The Joybee 102R also includes:

- Rechargeable Li-Ion battery, providing up to 10 hours of playback
- Convenient bus-powered operation and battery recharging through USB connection
- Bundled with QMusic software



Klipsch ProMedia Ultra 2.0
MSRP: \$99.99
www.klipsch.com



ProMedia Ultra 2.0 Personal Audio System

The ProMedia Ultra 2.0 personal audio system is designed to deliver excellent performance from the simplicity and portability of a two-speaker setup. It was created for consumers who want superior, full-range sound quality but do not want to give up the space or run the wire required for a subwoofer.

This speaker system easily connects to Apple iPods and other MP3 players; laptop and desktop computers; and portable A/V devices such as TVs and CD and DVD players.

Listeners can also simultaneously feed a laptop PC signal and an MP3 signal to the speakers for mixed sound playback, making this system an excellent choice for both multimedia presentations and entertainment.

The ProMedia Ultra 2.0 consists of two magnetically-shielded satellite speakers. Each satellite is a highly efficient, two-way design that utilizes dual 2.5-inch fiber-composite cone drivers and a one-inch metalized polymer tweeter. An

first glimpse

Advertisement



exclusive Klipsch MicroTractrix Horn is coupled to the tweeter for maximum clarity and efficiency. The woofers are long-throw units powered by unique neodymium motor structures. This audiophile design approach provides rich midrange clarity, extended airy highs, and a satisfying bass punch, creating balance throughout the audio spectrum.

One of the satellites (the control speaker) hosts a bass level control along with the main volume, a headphone jack, and

auxiliary input jack for convenience. Each satellite has a sleek appearance with floating grilles and undercone termination, which hides the voice coil leads for a cleaner cone look.



first glimpse

Advertisement



JVC GZ-MC500 Digital Media Camera
MSRP: \$1799.95
www.jvc.com

Record Video To A Hard Drive

The new GZ-MC500 Digital Media Camera is the newest member of the JVC Everio family, the only currently available camcorders that record onto a hard drive. Like the single-CCD (charge-coupled device) Everio camcorders launched last fall, the GZ-MC500 records 60 minutes of DVD-quality video or thousands of photo-quality stills to a Microdrive removable

hard drive. With this newest Everio, JVC combines these benefits with three-CCD, 5MP performance.

The use of three CCDs combined with advanced pixel shift technology allows the GZ-MC500 to deliver 5MP digital stills with a maximum size of 2,560 x 1,920 pixels, along with a broadened dynamic range when recording still or moving

first glimpse

Advertisement



images. The result is naturally sharp, vivid color, good contrast, and clean images or videos with good low-light performance.

The benefits of recording video to a hard disk are the same as those that have made hard drive-based audio players so popular: random access to quickly locate desired material, the ability to effortlessly delete unwanted material, and the ability

to easily rearrange playback sequence. There's also no danger of mistakenly recording over something you want to keep.

JVC
The Perfect Experience

first glimpse

Advertisement



**PNY Executive Attaché 2.0 USB
Flash Drive & Pen**
(\$24.99 for 128MB; \$39.99 for
256MB; \$64.99 for 512MB)
www.pny.com

Portable Memory Storage Solution For Today's Mobile Lifestyle

PNY's Executive Attaché USB 2.0 flash drive and ballpoint pen is a multifunction, convenient, portable data storage solution designed for professionals on the go. This award-winning device is easy to use. Simply unscrew the top portion of the Executive Attaché and plug it into an available USB port on a desktop, notebook, or mobile computer's USB port. It will be recognized as a removable drive, which enables the immediate transfer of large data, music, or image files—no additional drivers are needed.*

PNY Executive Attaché USB 2.0 flash drives are able to store the same file types as a hard disk drive. They can be erased and reused repeatedly while maintaining data integrity.

**Note: Drivers are necessary for Windows 98SE*

Other Features:

- Available in 128MB, 256MB, and 512MB capacity
- USB 2.0 data transfer rate
- Three-foot USB extension cable & standard pen refill included





Jabra BT800
MSRP: \$149.99
www.jabra.com

Style & Substance

With the BT800, your phone becomes the accessory. Your mobile phone's functions and operations are simply mirrored on the headset, giving you an immediate feeling of familiarity. It's innovative, yet intuitively simple to use.

Functions at your fingertips: All the features and operations you're so familiar with on your mobile are now available from the headset itself. Using just four controls (the Mute button, jog wheel, Answer button, and the End button), accessing the functionality you need is easy and natural. For example, the jog wheel (used for scrolling through menu functions in standby mode) becomes the volume control during a call. Soon it'll be second nature.

Blue backlit screen: Unique to the BT800 is the blue backlit LCD, which shows "Caller ID" on incoming calls so you know who's calling—no need to look at your phone. You can also use it to view the phone's call list and menu options.

Digital Signal Processing: The BT800's unique DSP (Digital Signal Processing) means that, whatever the environment, you are assured of optimum audio quality. DSP's automatic volume control compensates for noisy surroundings by increasing the listening level accordingly. Noise-cancellation technology means that the incoming caller can hear you more clearly.

Vibrate alert or favorite ring tone: The BT800's call vibrate/ring tone function enables you to select your favorite ring tone from the headset itself. Or if you prefer, simply set the BT800 to Vibrate Only, so you silently know when a call is coming through.

Jabra

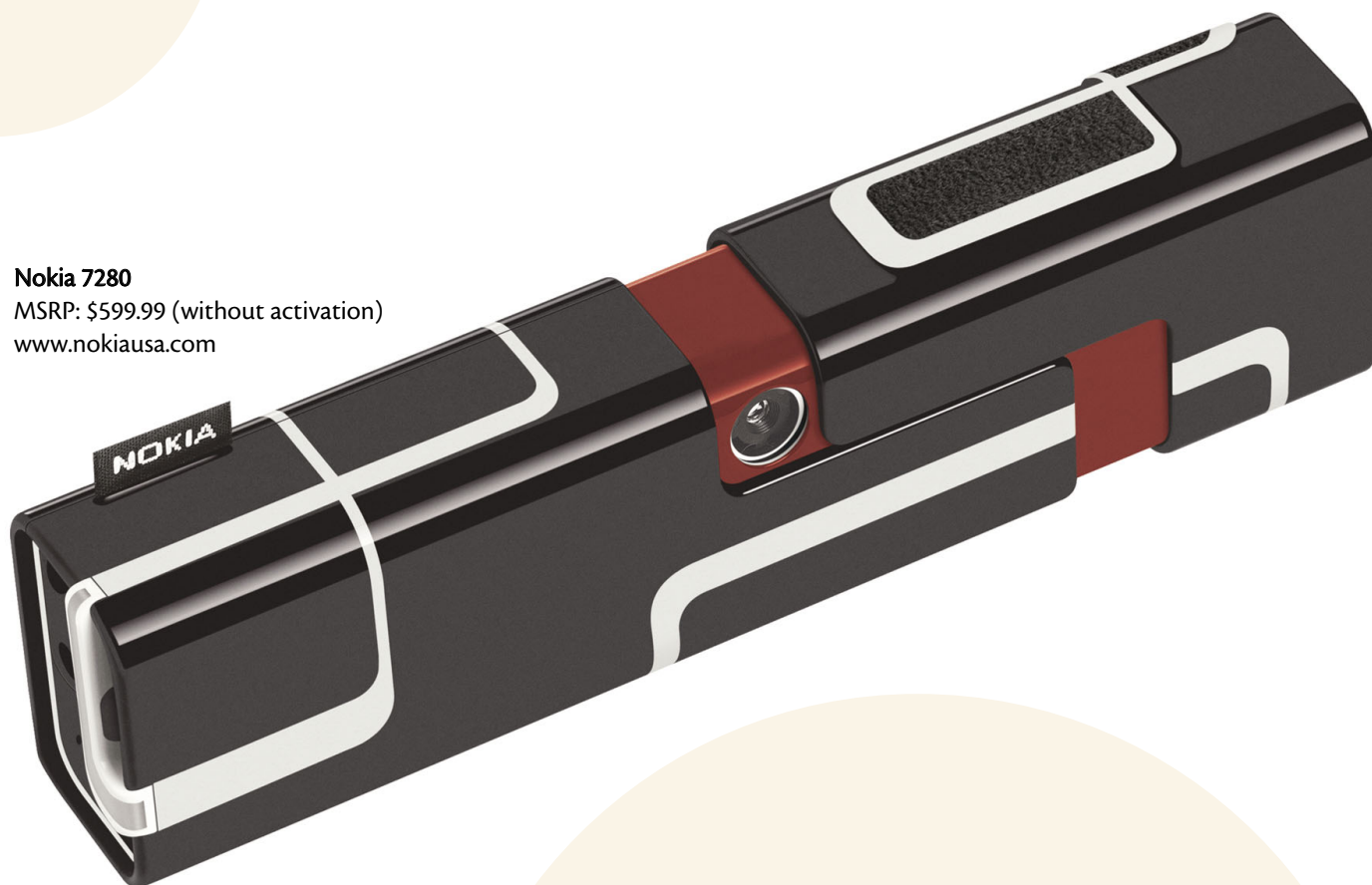
first glimpse

Advertisement

Nokia 7280

MSRP: \$599.99 (without activation)

www.nokiausa.com



Nokia 7280

Nokia's "going out phone," the 7280 has a high-gloss, lacquer-inspired finish, and you can accessorize it with a little black carrying pouch. The 7280 makes a distinct fashion statement and comes loaded with features.

Voice

- Answer and end calls in true style with the active slide
- Slides open to reveal a hidden camera and mirror-finish display
- With the unique rotator, there are no number keys; only Select, Send, and two soft keys

- Voice-activated user interface for a more personal touch
- Internal hands-free speaker

Camera & Video

- Integrated VGA (Video Graphics Array; 640 x 480) camera
- Video streaming

Organization

- Phone book with up to 1,000 contacts with multiple entries per contact
- Calendar with notes and reminders

first glimpse

Advertisement



- Alarm clock
- To-do list

Connectivity

- HSCSD (High Speed Circuit Switched Data) and GPRS (General Packet Radio Service) for high-speed data connectivity
- SyncML for daily synchronization of daytime and nighttime phones
- Send and receive data via Bluetooth wireless technology or via infrared

Specifications

- Weight: 3oz.
- 4.53 x 1.26 x 0.75 inches (H x W x D)
- Supports up to 65,536 colors within 104 x 208 pixels
- Internal antenna and vibrating alert

Service

- SM/GPRS 900/1800/1900 MHz

NOKIA

first glimpse

Advertisement



Nokia 7610
MSRP: \$450 (without activation)
www.nokia.com

Provocative, Powerful & Personal

The Nokia 7610 phone is small but powerful, with a megapixel camera and a provocative design that's sure to get noticed.

Imaging

- 1,152 x 864 resolution for higher quality photos
- Display: 176 x 208 pixels, up to 65,536 colors
- Video recorder: Edit video clips to create your own personal movies with your choice of music
- Advanced technology: Supports higher quality picture printing and image uploading
- Organization: Store your photos and videos in the gallery or transfer them to your PC (requires USB cable, included with phone)

Personalization

- High style: Choose your own style pack with matching Xpress-on color cover and wallpaper (sold separately)
- Customizable features: Personalize your wallpaper and the background of your main menu screen with your own personal photos
- Calling cards: Attach thumbnail images to contacts in your phone book

Messaging

- MMS (Multimedia Messaging Service): Combine image, video, text, and voice clips and send as a multimedia message to a compatible phone or PC

first glimpse

Advertisement



- Email: Access your work and private email accounts
- Text messaging and picture message templates: Stay in touch with friends and family (Only devices that offer compatible multimedia message or email features can receive and display multimedia messages. Content appearance may vary. Some images and ring tones cannot be forwarded.)

Specifications

- Tri-band phone: GSM/GPRS 850/1800/1900 or 900/1800/1900 networks
- Weight: 4.13oz.
- Dimensions: 4.27 x 2.08 x 0.74 inches (h x w x d)
- Compact size makes it easy to carry in a purse or pocket
- Multiple language support

- Internal antenna and vibrating alert
- 48 polyphonic ring tones

NOKIA

Siemens SX66
MSRP: \$549.99 (w/ 2-yr contract)
www.siemens.com



Siemens SX66 Windows Mobile Pocket PC-Based Wireless Handheld

Siemens' SX66 with Microsoft's Windows Mobile 2003 Second Edition Software delivers voice, data, an integrated keyboard, and Wi-Fi capabilities.

The SX66, which is sold through Cingular, combines a quad-band (850/900/1800/1900 MHz) GSM "world phone" and wireless PDA in a portable office workhorse that mobile professionals can use to stay connected when working from home or in the field, or when traveling around the world. Cingular customers can use the Siemens SX66 to access their calendar, inbox, contacts, tasks, and Cingular's Xpress Mail, browse the Internet, and access corporate networks via a VPN (virtual private network).

The device allows customers to tap into the benefits of high-speed wireless connectivity via Cingular's GPRS (General

Packet Radio Service) network, as well as via Wi-Fi. Additionally, the Siemens SX66 offers integrated Bluetooth, for wireless connectivity of headsets and peripherals, and Windows Mobile software with the integrated and familiar pocket versions of Outlook, Word, Excel, MSN Messenger, Internet Explorer, and Windows Media Player.

The SX66 is a slider-type device with a hidden QWERTY keypad that users can pull open for easy use of email, messaging, and Pocket Word and Excel, as well as a speakerphone and a voice memo recorder. Unlike other PDAs on the market, the SX66's innovative sliding keyboard design gives customers access to a full screen. The display on the SX66 is a 3.5-inch transfective TFT-LCD (thin film transistor-LCD) color touch screen that supports up to 64,000 colors with a 240 x 320

first glimpse

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resolution. Other features include MMS (Multimedia Messaging Service), an integrated MP3 stereo player, and video playback.

The SX66 is powered by an Intel PXA263 processor at 400MHz and has up to 128MB of internal memory, which is ideal for enterprise customers who need to load applications on the device. It also comes with an SD (Secure Digital) card slot for flash data storage, plus IrDA (Infrared Data Association) interface and USB synchronization station for data transfers. The device provides up to eight days of standby time and up to four hours of talk time in a small package weighing 7.4 ounces and measuring approximately 4.92 x 2.82 x 0.74 inches (HxWxD). A battery, headset, spare stylus, travel charger, DC jack converter, and a carrying case are included with the SX66.

Additionally, with Windows Mobile 2003 Second Edition Software from Microsoft, the SX66 delivers a wide array of entertainment capabilities along with the power of productivity. The software provides seamless synchronization with digital media, allowing users to enjoy their music or videos wherever they are.

SIEMENS

first glimpse

Advertisement



Siemens S66
MSRP: \$99.99 (plus service)
www.siemens.com

Stay Connected With Siemens' S66

From its appealing design to its complete set of business features and applications, the Siemens' S66 mobile phone is in a class of its own. This high-resolution, integrated digital camera phone offers bright pictures and up to 30 seconds of digital video. Users can review and edit all captured material on the phone's 132 x 176 color display before it's sent to others via MMS (Multimedia Message Service) or stored to the phone's 32MB RS MultiMediaCard.

The S66 is a global phone equipped with Bluetooth technology and has the ability to synchronize with Microsoft Outlook and Lotus Notes. It weighs 3.5 ounces and has up to five hours of talk time. The S66 has a Li-ion battery, 40-chord polyphonic sound, speakerphone, Instant Messaging, Java games, and optional accessories, such as an attachable flash for

the camera and a Bluetooth car kit that helps drivers stay safely connected while on the road.

Additional Features

The Siemens S66 also includes:

Integrated Digital Camera: The high-resolution, integrated digital camera in the S66 mobile phone allows users to capture life's moments with amazing clarity and detail. Zoom in, zoom out. Control brightness and contrast. Change image resolution. Use the flash accessory (sold separately) to snap pictures at night. And with up to 1.3MP (megapixels) and 65,536 colors, pictures will shine with color and quality.

Expanded Memory: Store more with the S66 mobile phone. The exchangeable RS MultiMediaCard holds up to 32MB of

first glimpse

Advertisement



expanded memory. Save pictures, video, and other files to the RS MultiMediaCard and transfer them easily to other devices.

Video Capabilities: Remember life as it happens. Now users can capture action with the video feature on their S66 mobile phone. Record up to 30 seconds of digital video, save it, and send it to those who missed it the first time. Video clips can be sent as part of a message or saved for future playback.

Mobile Office: Everything users need to conduct their daily business is right at their fingertips. Manage contacts and calendars. Send and receive emails. Synchronize with Microsoft Outlook or Lotus Notes.

Advanced Messaging: The S66 mobile phone offers versatility in messaging. By adding sound and images using MMS, users maximize impact and add colorful expression to the

messages they send. With the Text Message To Group feature, users can send information to their friends simultaneously. They can even contact their online friends with instant messaging.

Stay Connected: Supporting Bluetooth, USB, serial, and infrared technologies, this phone comes complete with the latest in wireless networking. The S66 allows users to choose the methods that best fit their environment or application.

SIEMENS

digitize
organize
accessorize



ceLifestyles.com

Lifestyles™



Home Automation for Real People

With Control4, you can finally stop using "home automation" and "when I win the lottery" in the same sentence. That's because we offer a more practical approach for automating and simplifying all the different technology in your home—from lighting, temperature, and security systems to sophisticated home theater centers. Every Control4 solution is easy to install in new or existing homes, a pleasure to use, and surprisingly affordable. So visit our Web site to find an authorized Control4 dealer near you. And discover exactly how easy and inexpensive home automation can be.

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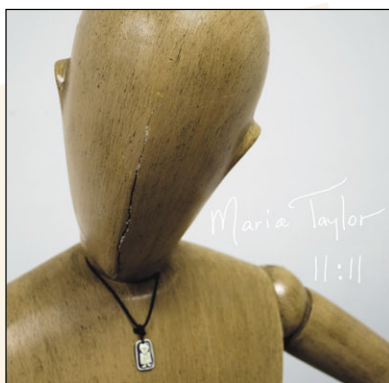
Control

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music & movies

m u s i c

BY LIZ DIXON



Maria Taylor

"11:11"

\$12.98 • Available: May 24

There must be something in the water lately at Saddle Creek Records. The record label (local to our metropolitan area) continues to dominate the indie scene and produce artists with distinct musical renderings. Maria Taylor is a part of Azure Ray, the label's peaceful female duo, originally out of Athens, Ga. She has also collaborated with bands Now It's Overhead and Bright Eyes on their most recent albums.

"11:11" is Taylor's first solo attempt, and her vocals and introspective lyrics will likely impress critical listeners. Taylor's understated strength breaks through even the gentlest notes, and the melancholic tone gives the album a delicate vibe. She tenderly reminds us that life is often more than meets the eye, er, ear.

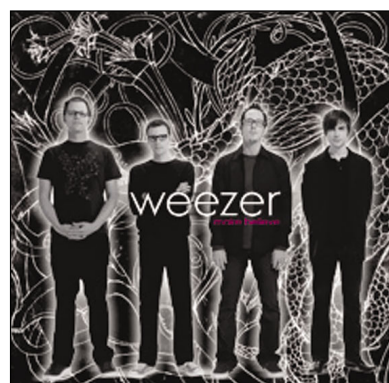


2005 Original Broadway Cast

"Spamalot"

\$18.98 • Available: May 3

If you can't get a ticket to the hottest show on Broadway, at least you can still enjoy the soundtrack. With a cast including Hank Azaria, Tim Curry, and David Hyde Pierce, this musical proves to be as silly as "Monty Python and the Holy Grail," the movie it's based upon.

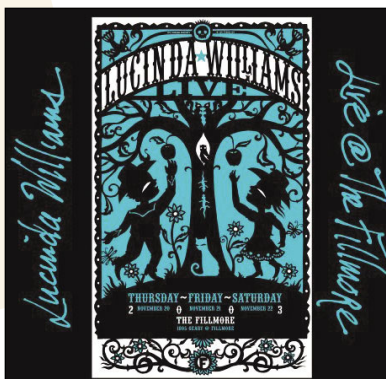


Weezer

"Make Believe"

\$13.98 • Available: May 10

Weezer's fans have been chomping at the bit since the band's 2002 release of "Maladroit." Luckily for Weezer fans, the reward for their patience is "Make Believe." This album features the same tightness and flow the band displayed on its preceding albums.

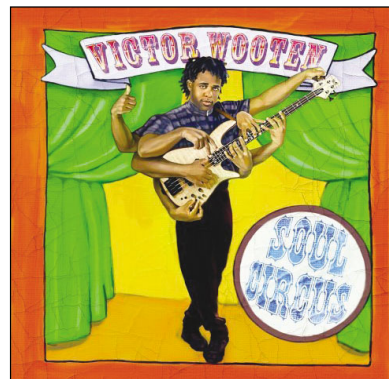


Lucinda Williams

"Live At The Fillmore"

\$19.98 • Available: May 10

Lucinda Williams' first live album, "Live At The Fillmore," features songs from her 2003 "World Without Tears" tour—most from her more recent albums. Fans from back in the day may wonder where the classics are. This album brings her live style into your living room and displays her natural talent.



Victor Wooten

"Soul Circus"

\$16.98 • Available: Now

Béla Fleck and the Flecktones' Victor Wooten released "Soul Circus," the bassist's fifth studio album. With his influential talent, Wooten has earned himself a spot with only the best bassists. His brothers Regi and Joseph plan to join him on the road on guitar and keyboard, respectively.

**"Music is love
in search of a word."**

—Sidney Lanier



"Hotel Rwanda"

\$26.95 • Available: Now

In 1994, during the Rwandan civil war, the Hutus massacred nearly a million Tutsis. That's not during the 1960s or the World Wars. It was just over 10 years ago, yet the world did nothing in the face of genocide, which was not even heavily covered by the media. Women, children, men, sons, daughters, mothers, and fathers were slaughtered with machetes, and roads were jammed with bodies of the dead. However, this movie steers clear of the graphic violence to focus on Paul Rusesabagina (Don Cheadle), an assistant manager at a five-star hotel who didn't set out to be a hero but saved 1,200 lives during the massacres. Watch this movie, and you'll appreciate your life, family, and country. "Hotel Rwanda" was a tough film to make, but you'll be glad they made it. The producers managed to eke out a PG-13 rating, so it's a film you can watch with your teenagers to maybe help them create a better tomorrow.



"Ocean's Twelve"

\$27.95 • Available: Now

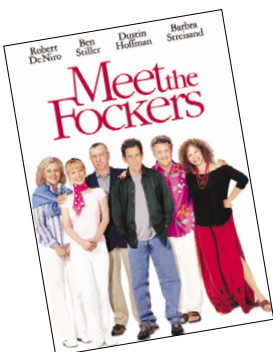
George Clooney, Brad Pitt, Julia Roberts, Don Cheadle, Andy Garcia, Bernie Mac, and Matt Damon return with new addition Catherine Zeta-Jones for a second outing with director Steven Soderbergh. There's a new caper afoot, and like before, all is not as it seems. Terry Benedict (Garcia) finds Danny Ocean (Clooney) and wants his \$160 million back, which sets the stage for an all-new heist, but this time it is in Europe. Unfortunately, the film lacks the knack of its predecessor and seems far less spontaneous than "Ocean's Eleven." What you do feel is the cast having a party on your dollar. Then again, you get to party along with George, Brad, Don, and Matt.



"House Of Flying Daggers"

\$28.95 • Available: Now

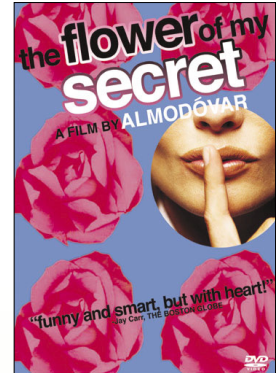
Fans of Asian martial arts cinema won't want to give this film a pass. If you enjoyed "Crouching Tiger Hidden Dragon," you can't afford to miss "House Of Flying Daggers." Unlike the last majorly hyped film in this genre, "Hero," "Flying Dagger" features compelling characters that further the story. The setting is A.D. 859 near the end of China's Tang Dynasty. Two officers set out to infiltrate and take down rebels, known as the House Of Flying Daggers. However, things do not go according to plan. We'll leave it at that so as not to ruin the various plot twists. Luscious visuals, poetically choreographed combat sequences, and cunning plots twists create a movie that does not feature a dull moment. We recommend you watch the film with the original Mandarin soundtrack and English subtitles for the full effect, but English and French voice-overs are available for the more timid.



"Meet The Fockers"

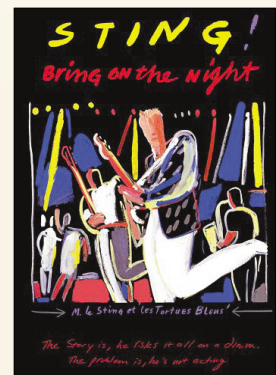
\$29.95 • Available: Now

In 2000 we winced and laughed when Gaylord Focker (Ben Stiller) and fiancée Pam Byrnes (Teri Polo) visited his future in-laws (Robert De Niro and Blythe Danner) in "Meet The Parents." The situations are ratcheted up a notch in "Meet The Fockers" when the aforementioned in-laws and fiancée take an RV trip to meet the Focker side of the family (Dustin Hoffman and Barbra Streisand) in Miami for the first time. As is common with comedic sequels, this isn't quite on par with the original, but it has plenty of laughs to offer without breaking the circle of trust.



"The Flower Of My Secret"

Also known as "La Flor De Mi Secreto," this is Pedro Almodóvar's 1995 film that's more conventional than his usual fare. Leo (Marisa Paredes) writes gushy romances under a pseudonym that she herself despises. An opportunity arises that will raise her to a new level as an author, but to do so she must first look within.



"Bring On The Night"

This 1985 documentary follows a post-Police Sting, armed with a group of the world's top jazz musicians, as he prepares for his solo-debut tour ("The Dream Of The Blue Turtles") in France. In all the madness that ensues, we witness the birth of his first baby with wife Trudie Styler. Sting taking risks is Sting at his best.

other notable releases

games . . .

for you and the people in your life

BY VINCE COGLEY

Multiplatform



Medal Of Honor: European Assault

Assume the role of U.S. Army Lieutenant William Holt in the latest installment of EA's long-running World War II first-person-shooter franchise. Medal Of Honor: European Assault drops you in 1942 Europe and pits you against the full force of the Nazi army. Fighting takes place in historically accurate locales and features more than 35 authentic World War II weapons. Previous Medal Of Honor games have earned a Teen ESRB rating, so European Assault might be too intense for younger gamers.



ESRB Rating: Rating Pending (RP)
\$49.99
Electronic Arts
www.ea.com



Digimon World 4

The natural foil for Nintendo's Pokémon series, the Digimon universe features its own unique collection of monsters. In Digimon World 4, up to four players can control popular Digimon characters from the TV series. As you play through the game, perfecting skills and techniques unlocks special Digivolved Digimon. Digimon World 4 features real-time battles and an improved battle system.



ESRB Rating: (E)veryone
\$29.99
Bandai Games
www.bandaigames.com

Nintendo DS



Pac-Pix

America's favorite yellow specter-devouring hero makes his debut on Nintendo DS in Namco's Pac-Pix. Using the DS's unique touchscreen capabilities, players literally create Pac-Man with precise stylus strokes and guide him along a path to gobble up ink ghosts that have infested books and paintings. You can draw multiple Pac-Men (*Mans?*) to combat large numbers of ghosts or sketch a gargantuan Pac-Man to challenge ghosts of larger proportions.



ESRB Rating: Rating Pending (RP)
\$34.99
Namco
www.namco.com



Franklin PageMark Dictionary With Book Light

The cat's asleep, your chamomile is still hot, and you're curled up with a remarkable book. Invariably, that's the moment you happen upon an unfamiliar word. No way are you going to leave this state of contentment to go fetch your heavy old dictionary. Fortunately, there's one built into your bookmark. Franklin's new PageMark RDC-525 (\$59.95; www.franklin.com) packs an 80,000 word dictionary from Merriam-Webster and can even try to recognize words that are hard to type in correctly. Its bright book lamp's batteries are separate from the dictionary's long-life Lithium one—a thoughtful touch. Finally, a built-in calculator and currency converter mean even fewer reasons to get up.

Magpix Pocket Photo Album

If your digital camera uses SD (Secure Digital) or MMC (MultiMediaCard) memory cards, check out this neat accessory for it. The Personal Photo Album from Magpix lets you display your cards' photos on a TV or on its own 1.5-inch color LCD. With just 16MB of permanent memory, the PPA is more of a show-your-photos gadget than a storage dump into which you can empty your card and keep snappin'. However, you *can* use it in the field to save a handful of choice high-resolution pics. The Personal Photo Album uses two AAA batteries, but we wish there were at least an optional AC adapter for extended display sessions over the TV. It comes in Titanium Silver or Pink Thistle anodized aluminum for just \$99.95 (www.magpix.com).

SanDisk Cruiser Titanium 2GB

Beauty and strength—the Cruiser Titanium USB flash memory drive embodies both. Its alloy body is gorgeous yet incredibly strong and lightweight. You'll feel confident carrying around up to three CDs' worth of data on your Titanium because of its additional encryption software that can keep your secrets safe. (Of course, experience has taught us that flash drives can die or go insane with zero warning, no matter how tough their shells.) There's also a preinstalled utility to sync the Cruiser with your Outlook data. A 2GB model should be available for \$249.99 by the time you read this (www.sandisk.com).

& gifts

on the lighter side of technology

BY MARTY SEMS

RetroScope

Evolution Of Portable Big-Screen TVs

Long before the advent of big-screen flat-panel and microdisplay TVs that occupy minimal space in any room, Super Bowl fans watched the big game on front-projection and rear-projection TVs that were all large enough to dominate a room.

In 1979, Mitsubishi introduced the world's first self-contained, one-piece projection TV. Older front-projection models had two separate pieces. The first rear-projection TVs were introduced in the early 1980s, and the evolution continued with bigger, flatter, and wider.

1986

It wasn't just rear-projection sets that were evolving. Mitsubishi also invented the first 35-inch direct-view (picture tube) TV in 1986. Other direct-view TVs available at that time had a 27-inch picture tube. Mitsubishi's 35-inch TV cost \$3,200. Other brands followed several years later.



1993

Mitsubishi introduced the world's first mass-produced 40-inch direct-view color TV in 1993. It cost \$5,000. Mitsubishi stopped selling 40-inch direct-view TVs in 1998.

Also in 1993, Thomson introduced the first widescreen picture tube available in North America with a 34-inch screen size. The picture tube had a rectangular, 16:9 shape. (Since 1946, all TVs had used a 4:3 aspect ratio picture tube.) An RCA CinemaScreen widescreen TV cost \$5,000.





1995

Thomson again broke new ground with the world's first 80-inch rear-projection TV, introduced in 1995. It was only 32 inches deep and featured a nine-inch optics system with 50% more light output than the seven-inch optics system used in previous rear-projection TVs. Suggested retail price was \$8,499.



2004

The introduction of HDTV technology led to the development of new big-screen TV options, including the world's first wall-mountable Microdisplay HDTV, a 61-inch model from Thomson's RCA Scenium brand in 2004. The TV uses DLP (digital light processing) technology developed by Texas Instruments, and it costs \$6,999.




2005

This year LG is selling the world's largest commercially available plasma TV, a 71-inch model. It costs \$75,000 and joins an LG 60-inch plasma TV that was the world's first in 2001. In recent years, LG and Samsung have shown prototypes of 76- and 102-inch models, respectively.



Also this year LG is selling the world's first plasma HDTVs with integrated DVRs. The 160GB digital video recorder can record up to 14 hours of high-definition broadcasts or 62 hours of standard-definition broadcasts. Two models, 60- and 50-inch, cost \$14,999.95 and \$7,999.95, respectively.

Expect Integration

Integration is the newest trend in big-screen TVs, industry insiders say. Last year, Mitsubishi introduced two DLP TVs that have integrated DVRs. More big-screen TV-DVR combinations, as well as more TVs with integrated memory card slots, are expected to debut in the months and years ahead. 

BY ROBERT E. CALEM

Camping CE

Ahhh, the great outdoors. June is a good time to get outside and spend a long weekend camping and exploring the green goodness of your local state park. If it's hard for you to completely let go of the modern world, or if you just prefer to bring a few of the conveniences of home sweet home, here are a few products you can use to stay connected 'round the campfire.



AM/FM Radio
www.ret.com
An oldie but goodie for news and weather

TrailAudio MP3 Player
www.ret.com

As rough and rugged as you wanna be



MULTI-NAVIGATOR GPS UNIT
www.campingcove.com

Have no fear of straying too far



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Plug into your car for an almost gourmet meal



Forever Flashlight
www.gadgetuniverse.com

Scare those bears away all night long



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Digital Handheld Compass
www.gadgetuniverse.com

No more wondering if the needle is broken

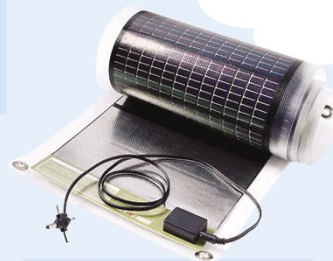


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INTRODUCING JVC'S HD-ILA TV

Jerry Bruckheimer
Producer



Chart a course for extreme brightness and high resolution with JVC's HD-ILA TV, powered by 3-Chip D-ILA. Featuring amazing picture quality and incredible sound, JVC's D-ILA (Direct Drive Image Light Amplifier) TV is designed to change the way you experience television. If you've been on a treasure hunt seeking both style and state-of-the-art in one cool, thin package, look no further – your search is over. But beware: with JVC's HD-ILA TV you just might actually feel as though there are pirates in your living room.

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